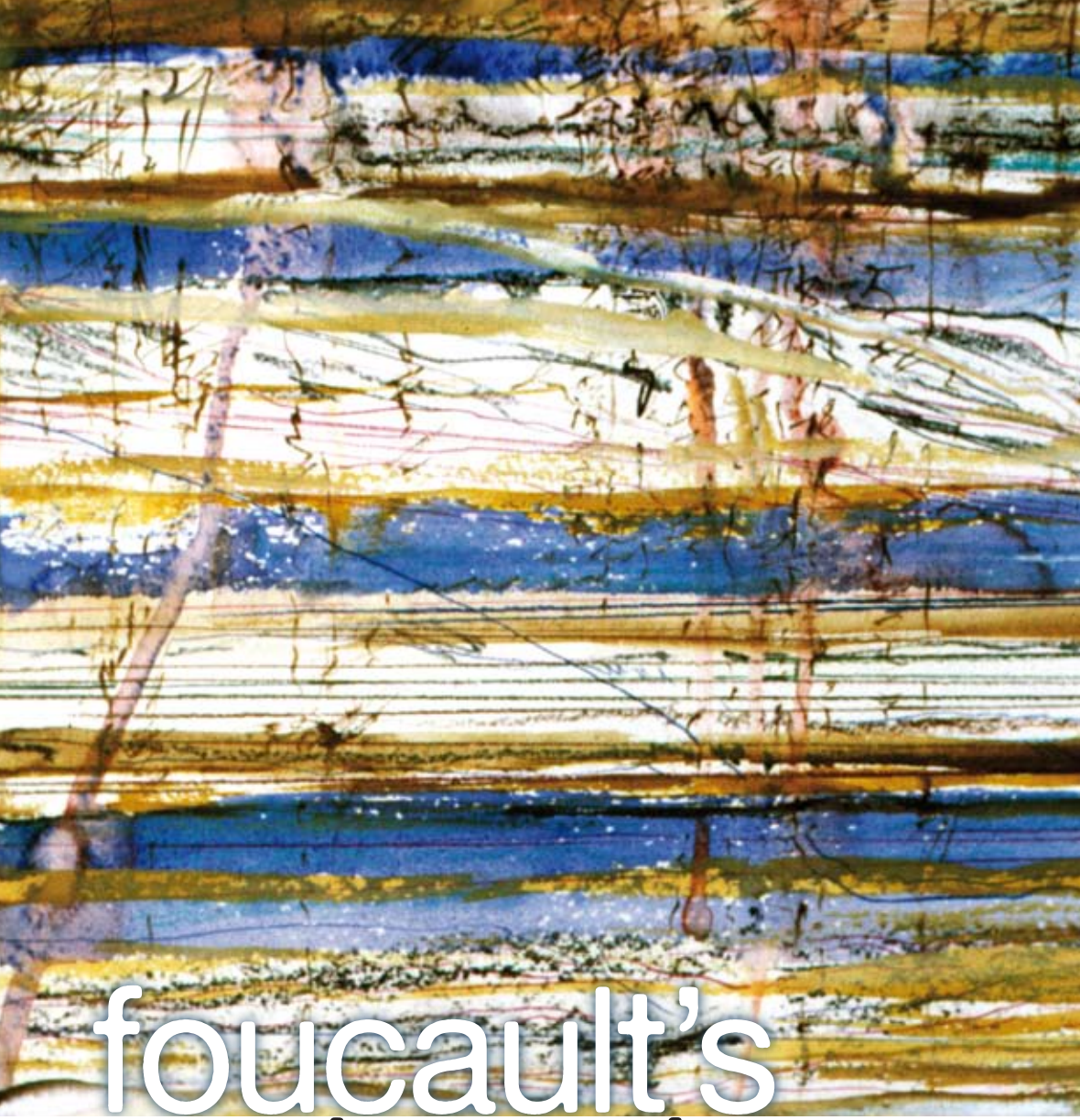
VISIT…



foucault's archaeology

science and transformation

David Webb

FOUCAULT'S ARCHAEOLOGY

FOUCAULT'S ARCHAEOLOGY

Science and Transformation

David Webb

EDINBURGH
University Press

© David Webb, 2013

Edinburgh University Press Ltd
22 George Square, Edinburgh, EH8 9LF

www.euppublishing.com

Typeset in 10.5/13 Sabon
by Servis Filmsetting Ltd, Stockport, Cheshire, and
printed and bound in Great Britain by
CPI Group (UK) Ltd, Croydon, CR0 4YY

A CIP record for this book is available from the British Library

ISBN 978 0 7486 2421 8 (hardback)
ISBN 978 0 7486 3038 7 (webready PDF)
ISBN 978 0 7486 7544 9 (epub)
ISBN 978 0 7486 7545 6 (Amazon ebook)

The right of David Webb
to be identified as author of this work
has been asserted in accordance with
the Copyright, Designs and Patents Act 1988

Contents

Abbreviations vii
Acknowledgements viii

Introduction 1

BACKGROUND 5

1. To What Problem Does *The Archaeology of Knowledge* Respond? 7
2. Gaston Bachelard: Construction and Temporal Discontinuity 11
3. Jean Cavaillès: Grounding Thought in its Own History 16
4. Michel Serres: Mathematics, Epistemology, History 22
5. Michel Serres: Atomism 28
6. The Mathematical A Priori 31
7. Temporal Dispersion 34

COMMENTARY ON *THE ARCHAEOLOGY OF KNOWLEDGE* 39

Part I Introduction
Introduction 41

Part II The Discursive Regularities
1. The Unities of Discourse 48
2. Discursive Formations 56
3. The Formation of Objects 62
4. The Formation of Enunciative Modalities 69
5. The Formation of Concepts 72
6. The Formation of Strategies 77
7. Remarks and Consequences 80

Part III The Statement and the Archive
1. Defining the Statement 85
2. The Enunciative Function 90
3. The Description of Statements 98
4. Rarity, Exteriority, Accumulation 105
5. The Historical A Priori and the Archive 111

Part IV Archaeological Description
1. Archaeology and the History of Ideas 120
2. The Original and the Regular 122
3. Contradictions 128
4. The Comparative Facts 132
5. Change and Transformations 136
6. Science and Knowledge 143

Part V
Conclusion 152

CLOSING REMARKS **159**

Notes 166
Selected Bibliography 174
Index 178

Abbreviations

Page references are to the English editions where translations are available, with the exception of references to *The Order of Things* and *The Archaeology of Knowledge*, which are given to the English and French editions in that order.

AK Foucault, Michel, *The Archaeology of Knowledge*, trans. Sheridan, Alan (London and New York: Routledge, 2002). *L'archéologie du savoir* (Paris: Gallimard, 1969).

BP Serres, Michel, *The Birth of Physics* (Manchester: Clinamen Press, 2000).

HI Serres, Michel, *Hermes I: la communication* (Paris: Minuit, 1968).

HII Serres, Michel *Hermès II: L'interférence* (Paris: Minuit, 1972).

IK Foucault, Michel, *Introduction to Kant's Anthropology*, trans. Nigro, Roberto and Briggs, Kate (Los Angeles: Semiotexte, 2008).

NM Bachelard, Gaston, 'Noumena and Microphysics', trans. Reggio, David, *Angelaki*, Vol. 10, No. 2, 2005, pp. 73–8.

OC Cavaillès, Jean, *Oeuvres complètes de philosophie des sciences* (Paris: Hermann, 1994).

OT Foucault, Michel, *The Order of Things*, trans. Sheridan, Alan (London: Routledge, 1970).

PN Bachelard, Gaston, *La philosophie du non* (Paris: Presses Universitaires de France, 1940).

TI Bachelard, Gaston, 'The Instant', trans. McAllester Jones, Mary, in Durie, Robin (ed.), *Time and the Instant* (Manchester: Clinamen Press, 2000).

Acknowledgements

A big thank you to Chrissie and Chat for making the start not only possible, but such a pleasure. I am indebted to Carol MacDonald and everyone at Edinburgh University Press for steadfast support, to Donny Frangeskou, Nikki Czuczman and Brian Robinson for reading a draft and passing on many useful comments. Thanks also to Zbigniew Kotowicz for some very helpful suggestions and for really getting me started on Bachelard in the first place, and to Douglas Burnham for all those essential planning sessions. Finally, thank you to Francesca for all the time she gave up at home.

Introduction

The Archaeology of Knowledge by Michel Foucault is a book that presents a number of challenges. Most obviously, it introduces a lot of new terminology and makes many methodological distinctions, and for this reason presents a certain technical difficulty. However, there are other reasons. First and foremost, it addresses a specific problem that is not really explained in the book itself, concerning how thought in late modernity has responded to the impasse that Foucault describes in the final chapters of *The Order of Things*, and which hinges on the finitude of man. My first aim in this book is to show that *The Archaeology of Knowledge* is a deliberate attempt to accelerate a response that was in his view already underway. In addition, Foucault's text does little to make it clear where the most important precedents lie for the conceptual and methodological steps that he takes. For many readers, this is made worse by the fact that some of these precedents may be relatively unfamiliar today. Without some appreciation of them, however, I believe one's understanding of what Foucault is doing in this book will be incomplete. The precedents lie primarily in the philosophy of mathematics, the philosophy of science and the epistemology of the first half of the twentieth century, and in particular in the work of Gaston Bachelard and Jean Cavaillès. Michel Serres' early work on the history and epistemology of mathematics is also very significant, as are other elements of his thinking, such as his readings of atomism and of Leibniz.

It is on the basis of this work, I maintain, that Foucault elaborates the central ideas of *The Archaeology of Knowledge*, and in particular his attempt to respond to the challenge that he set near the end of *The Order of Things*; namely, to repeat Kant's critique of pure reason on the basis of the mathematical a priori (OT 383, 394). In different ways, for Bachelard, Cavaillès and Serres, mathematics is fundamentally

historical in its practice, and even in its formal basis. As a result, the conception of the mathematical a priori to which Foucault refers feeds directly into an understanding of the historical a priori, which remains one of the most contested ideas in Foucault's work as a whole, and certainly in *The Archaeology of Knowledge*. The understanding of history that emerges also involves an engagement with the question of time, and here again the work of Bachelard, Cavaillès and Serres is crucial. In thinking about the question of time in relation to the conditions for knowledge and experience, one comes up against Foucault's conception of the historical a priori. This has been read as the key element in Foucault's attempt to rethink the transcendental conditions for knowledge and experience without recourse to the category of the subject. However, it may be that Foucault goes further still, and that the idea of the historical a priori, and the whole apparatus of which it is a part, is developed with the intention of avoiding the category of the transcendental as well. Taking such a view, the reading I put forward proposes that the mathematical background to archaeology allows Foucault to introduce the idea of historical a priori conditions for discourse without repeating the distinction between the transcendental and empirical that would tie archaeology back into the situation from which it aims to break free.

The first part of this book comprises a short series of introductory pieces that have two functions. First, they put Foucault's study in the context of his diagnosis of the situation of knowledge and thinking at the end of modernity. Second, they outline the themes and ideas in the work of Bachelard, Cavaillès and Serres that I think are important for understanding Foucault's text. These pieces are not intended to be comprehensive and I encourage anyone interested in the ideas they introduce to read further for themselves. The main body of this book is then simply a commentary, chapter by chapter, on *The Archaeology of Knowledge*, written with the material and the problematic I have described in mind.

While it is my view that a reading based on this material is important for an appreciation of what happens in *The Archaeology of Knowledge*, I do not claim that the reading presented here is the final word. There are too many precedents, problematics and textual connections not covered here for that to be the case. In particular, I do not discuss the work of Georges Canguilhem or of Louis Althusser, but this is only for reasons of simplicity and clarity, and because their connection with Foucault is already well documented. Finally, this book focuses solely on the account of archaeology presented in *The Archaeology of Knowledge*, without reference to other works by Foucault where

this idea also appears. Again, this is simply to try to make the reading here as clear as possible, and to avoid having to take into account the changes that took place in Foucault's own work over the period in question.

BACKGROUND

1. TO WHAT PROBLEM DOES *THE ARCHAEOLOGY OF KNOWLEDGE* RESPOND?

In *The Order of Things*, Foucault recounts how, in his view, thought in modernity has run into something of a dead end. Different branches of enquiry are held within a structure which ensures that each alone is necessarily incomplete, or which commits them to tracking an origin that moves continually beyond reach. At the heart of this diagnosis of the condition of thought in modernity lies the figure of man, and in particu--lar of the finitude of man.[1] *The Order of Things* famously closes with the suggestion that man, this pivotal figure in the drama of modernity, may be a recent invention and one perhaps nearing its end, soon to disappear 'like a face drawn in sand at the edge of the sea' (OT 387, 398). If *The Archaeology of Knowledge* is read as a methodological clarification of how Foucault understood the practice of thinking at the time, then, in its simplest form, his challenge is to explain the meaning of this disappearance. Yet the final two chapters of *The Order of Things* leave no doubt that Foucault was more than just a dispassionate observer of the changes he saw overtaking the figure of man in modernity and regarded himself as a participant in the transformation of the practice of thinking described in those chapters. However, for all the rich detail in Foucault's analysis of what had become of thinking in modernity, the description of what lay ahead is sketchy. *The Archaeology of Knowledge*, published three years after *The Order of Things*, can therefore be read not just as a retrospective exercise in methodology covering his earlier works, but as an experiment in a form of thought that he saw taking shape in the wake of the disappearance of man. As such, it takes up some of the ideas merely outlined in the closing pages of *The Order of Things* and works them into a lengthy (though never complete) inventory of concepts, problems and approaches in a new practice of thinking; one intended to break free from the impasse in which thinking had been caught in modernity.

In their early phases, the sciences of biology, economics and philology tried to draw the truth of their object of study from its own depths: life was to be defined from itself, labour was to illuminate the meaning and conditions of exchange, profit and production, and language was to yield up the conditions of grammar and discourse (OT 312, 323). This left 'man' in an ambiguous position. For it is only in terms of his body, his works and his language that he can be known, yet the sciences that address them depend in their turn on man as a living being, as the one whose labour is exchanged for profit, and one whose desires and thoughts are expressed in language. At the point where the laws

of life, production and language seem to exclude man, he reappears at their heart; and at the point where man seems most fully determined by these laws, he stands as their enigmatic condition. On the one hand, the figure of man seems to dissolve into the many currents of positive knowledge that form him; on the other hand, the 'objective' knowledge of man calls for a rigorous foundation, which leads to an inquiry into man as the finite subject who represents, and ultimately back to the Kantian problematic of uncovering the transcendental conditions for the possibility of experience. In this twofold movement, man is revealed as what Foucault calls a transcendental-empirical double, 'since he is a being such that knowledge will be attained in him of what renders all knowledge possible' (OT 318, 329). In practice, empirical sciences, such as neurophysiology, history and linguistics, depend on the figure of man as an object of study. In this sense, they presuppose the existence of a truth to be discovered. In the case of neuroscience, by learning about the functioning of the brain we are learning something not just about complex networks enclosed in the skull, but about ourselves in a more profound sense. Similarly, in the study of history there is at least the trace of an expectation that we will understand human life a little better, and not just the events leading up to a war or the transformation of a system of government. Yet these sciences must also presuppose that discourse involves a commensurate truth, in order that it can effectively communicate what it describes. Again, Foucault traces the dilemma faced by modern thought, but in slightly different terms: either the truth of the object determines the truth of the discourse that describes it, leading to positivism, or the truth of the philosophical discourse constitutes the truth of the phenomenon, leading to a form of discourse that Foucault calls 'eschatological' (OT 320, 331). Foucault presents the two modes of thought as indissociable: each alone is incomplete and calls forth the other, leading to a fluctuating movement between branches of enquiry, while 'man', as the fixed point on which thought as a whole might rest, remains out of reach. The attempt to settle the fluctuation by combining eschatology and positivism will only end in being both at once, and thereby lapse into a pre-critical naivety (OT 320, 331).

As Foucault has outlined, the empirical sciences of biology, economics and language that are intended to establish the truth of what both limits and grounds human existence depend on the conditions they are supposed to describe. Moreover, their relation to eschatology is secured by the figure of the finitude of man, around which the fluctuation between modes of inquiry occurs. But in fact, the analyses of life, labour and language that set out the concrete conditions determining the exist-

ence of man only trace the contours of a first, and superficial, form of finitude. In 'the spatiality of the body, the yawning of desire, and the time of language' they meet a more essential finitude than that to which they are proximally addressed. As Foucault writes, empirical positivities depend on the finitude of man understood not as a limitation but as 'a fundamental finitude which rests on nothing but its own existence as a fact, and opens upon the positivity of all concrete limitation' (OT 315, 326). As Foucault recounts, the determination of this fundamental finitude calls for an analytic of man's mode of being.

In response to the bifurcation of both man and knowledge in modernity, there have been attempts to fill the dimension opened up by discovering 'a discourse whose tension would keep separate the empirical and the transcendental, while being directed at both' (OT 320, 331). Such a discourse would have to illuminate the ground of both the empirical human condition and the capacity of the human for knowledge – a complex role Foucault sees as having been performed by a particular form of the analytic of finitude that he identifies as 'the analysis of lived experience' (OT 321, 331–2).[2] Lived experience is, he continues, 'both the space in which all empirical contents are given to experience and the original form that makes them possible in general and designates their primary roots' (OT 321, 332). In its fidelity to the finitude of man as a transcendental-empirical double, the analysis of lived experience appears to contest positivism and eschatology, to suppress the naivety of empirical discourse and 'restore the forgotten dimension of the transcendental' (OT 321, 332). It can do this only in so far as, beneath the division between positivism and eschatology, it traces the outline of lived experience as a third alternative, 'an ambiguous stratum, concrete enough for it to be possible to apply to it a meticulous and descriptive language, yet sufficiently removed from the positivity of things for it to be possible, from that starting point, to escape from that naïveté, to contest it and seek foundations for it' (OT 321, 332). In this way, it opens up communication between the body and culture, between nature and history, but only 'on condition that the body, and, through it nature, should first be posited in the experience of an irreducible spatiality, and that culture, the carrier of history, should be experienced first of all in the immediacy of its sedimented significations' (OT 321, 332). Although not the sole contributor to such an analysis, phenomenology, and Heidegger's analytic of the existence of Dasein in particular, is placed to make a major contribution here, since it aims to disclose the finite existence of Dasein as it shows itself from itself, without assuming a more general ontology, without taking over a traditional (metaphysical) conception of man, and without deriving

the finitude of Dasein from some notion of the absolute. However, in Foucault's view, Heidegger's phenomenology remains caught up in a deeper tendency within modernity.

Where the Cartesian *cogito* held out the promise of immediate certainty and transparency, modernity, writes Foucault, discovers only an obscure sensation that thought cannot coincide with itself, that it 'resides elsewhere than here' in so far as it is conditioned in ways that are difficult to fathom. The attempt to close up the gap that separates thinking from itself leads it down into the ramified and inert 'network of what does not think' (OT 324, 335). There, it hopes not to define itself against what it is not, but somehow to take hold of the unthought condition of its own being. As Foucault writes, the unthought is contained within man as something from which man cannot free himself. It is the Other of man, the 'in itself' in Hegel, the unconscious in Schopenhauer, the implicit and the inactual in Husserl, and alienation in Marx (OT 327, 338). For Heidegger, having characterised Dasein in terms of the finitude of its original temporality, the unthought takes the form of 'that rent, devoid of chronology and history, from which time issued' (OT 332, 343). In his later writing, it is the event of *Ereignis*. However it is understood, the weakness of phenomenology for Foucault lies in its repetition of the division between a founding event and a founded existence. As he sees it, if phenomenology takes the form of an interrogation of man in his relation to the unthought, then it 'continually resolves itself, before our eyes, into a description – empirical despite itself – of actual experience, and into an ontology of the unthought that automatically short-circuits the primacy of the "I think"' (OT 326, 337). Foucault's concern is that, regardless of this flaw, the analysis of lived experience, in the guise of phenomenology, takes upon itself the role of a founding discourse that it cannot fulfil. It enjoys a double privilege, in so far as the irreducibility of the dimension of its analysis secures its radicality, and the immediacy of experience safeguards its evidential basis.[3] As a consequence, while the analysis of lived experience succeeds in bringing to light the dimension underpinning both positivism and eschatology, and while it provides a fresh reading of human existence understood more than ever in its own terms, it exerts a conservative influence on the structure it apparently calls into question. In effect, by placing positivism and eschatology on a more secure foundation, the analysis of actual experience shores up the structure within which those discourses have their place. Foucault recognises that in order for thought to shake off this constraint and move freely beyond the division between transcendental and empirical forms of inquiry, the irreducibility of the space of actual experience and the immediacy of its evidence

must both be called into question. This amounts to allowing man to disappear from the scene. More specifically, it means breaking open the dimension of existence so that it is no longer a unity, guaranteed in advance and anchored in a transcendental ground, or opened by a founding event that has always already occurred. This raises two questions, or groups of questions. First, if the figure of man disappears in this way, then neurophysiology or history can no longer be regarded as perspectives upon a deep and enigmatic existence that underlies them. So what are they really about? Second, if the figure of the finitude of man disappears, what then becomes of the structure of knowledge, and in particular of its division between positivism and eschatology? Might it survive the loss and install itself in a new form?

Is there anything to prevent knowledge falling back into pre-critical naivety? In one way or another, for Foucault, the disappearance of man removes the requirement for unity that underpins knowledge, without thereby undermining knowledge itself, and he welcomes the pluralism and multiplicity that comes from this. Moreover, he does not believe that the disappearance of man means the triumph of positivism. There are conditions underpinning knowledge, and they are historical, not transcendental; but their history cannot be levelled down to that of empirical events. Foucault's challenge is to explain what status they do have, if they are neither transcendental conditions nor empirical causes. He will do this through an engagement with Bachelard, Cavaillès and Serres, and the ideas of the mathematical a priori and temporal dispersion. However, these descriptions are really little more than names for transformations that take place in the organisation of knowledge, and which need to be unpacked with care.

2. GASTON BACHELARD: CONSTRUCTION AND TEMPORAL DISCONTINUITY

Gaston Bachelard has been an immensely influential figure in French philosophy since his work became well known in the early 1930s. His importance for Foucault is quite properly given wide recognition, but the focus tends to be on Bachelard's idea of the epistemological break, and other elements of his thought receive less attention than they deserve. While the epistemological break is undeniably significant, the mathematical basis of Bachelard's constructivism, the way he positions his thought with respect to Kant, his understanding of modern physics, especially atomic physics (*microphysique*), and his account of temporal discontinuity, may all be at least as significant, if not more so. In addition, and interwoven with many of the themes

just mentioned, Bachelard's idea of a 'distributed rationality' and his description of science as 'a well ordered dispersion' both set a precedent that Foucault's archaeology was later to follow (PN 12).

For Bachelard, science is not the direct formalisation of experience, but the modification of the conditions of existing experience – first, as a break away from the everyday, and subsequently as a 'correction' of the conditions of the reality proposed by science. To open itself to the possibility of thinking scientifically, the mind has first to shake off the grip of everyday experience and the everyday practices that give the ideas within it a veneer of naturalness. This is the idea of the epistemological break as a condition for scientific thought that Bachelard introduced in *The Formation of the Scientific Mind*. The idea meets with an ambivalent response from Foucault: he accepts the need for thinking to pierce the surface of what appears natural, and therefore universal and beyond the possibility of transformation, but on the other hand his interest in the operation of power in and through scientific discourses meant that he was less of an outright advocate for science than Bachelard had been, and less judgemental about the shortcomings of everyday forms of thought and experience. Ironically, Foucault's appropriation of modes of thought taken from the mathematical sciences will be put to use later in a critical discourse that challenges the effects of science. Moreover, for Bachelard, the epistemological break is a relatively sharp division, whereas for Foucault the transition is a historical process that is most likely to be gradual, and which may depend on several different transitions taking place and falling into a pattern together before the break occurs. In short, what Bachelard describes as a clear-cut break is for Foucault a more complex process.[4]

Beneath the idea of the epistemological break lies the broader and more fundamental issue of Bachelard's constructivism, and therefore of his opposition to empiricism. Bachelard understood that modern science is driven by mathematics, and that mathematics is a language apart that is not a formalisation of our everyday experience. This means that it would be a mistake for mathematical science to look for a foundation for its judgements in intuition, since this would only tie it back to the world of sensibility, instead of allowing mathematics to devise new kinds of objects, concepts, and forms of judgement that have not been abstracted from experience.[5] Sensible intuition as we know it is only a narrow form of what intuition can be. This is illustrated by the development of non-Euclidean geometries, which began as an experiment in pure mathematics, with no expectation that it would have an application to the 'real' world. Yet many years after Gauss, Bolyai, Lobachevsky and Riemann tried setting aside Euclid's fifth

postulate, the strange geometries they produced proved crucial for the general theory of relativity.[6] In this example, mathematics constructed a description of a reality that did not exist, and which could only exist subsequently because of the freedom of mathematics from the world as it is experienced. This is to say that mathematics constructed the conditions of an experience that did not exist before. Another example is the physics of sub-atomic particles that also sprang into life in the early twentieth century. While their relations are treated as real and can be rigorously described, the particles themselves are 'represented by metaphors' and do not share the basic properties associated with objects of experience (NM 74). This is because, unlike objects of experience, sub-atomic particles are not substances about which we can learn more by isolating them (NM 74). They can only be spoken of at all in so far as they are in relation with other particles. Consequently, there are, writes Bachelard, only substantial properties above the microscopic scale, whereas 'the substance of the infinitely small is contemporaneous to the relation' (NM 74).[7] Mathematical physics, quite literally, proposes 'a noumenon beneath the phenomenon' (NM 76). It describes the non-phenomenal conditions of the phenomenal, which is then understood as constructed, rather than discovered or disclosed. This is a form of experimental metaphysics in which scientific rationality runs ahead of what is accepted as real, a practice that Bachelard calls 'sur-rationalism' (PN 19). The laws that give form even to phenomena as they present themselves at a given moment (so leaving aside future innovations in science) are therefore not to be drawn from empirical experience. Instead, one has to look for the 'rational laws we find at the level of noumenology' (NM 76).[8] He calls these laws the 'mathematical a priori', anticipating the phrase that Foucault uses towards the end of *The Order of Things* in recommending a new critical philosophy.[9] Bachelard then picks out two features of the mathematical a priori for comment. First, he insists that these conditions are characterised by complexity, a judgement he explains elsewhere in terms of the theory-dependence of the meaning of concepts. Just as particles have no substantial properties of their own and are only 'real' in so far as they are in relation with other particles, so concepts are intrinsically relational. For example, the basic elements of Newtonian science are those of absolute space, absolute time and absolute mass, but relativistic physics shows that these 'notional atoms' are themselves complex. The mass of an object depends on its velocity, and this in turn will depend on the frame of reference in which the description is given; and yet in spite of this, 'mass' remains a basic element of physics (PN 31). The 'beautiful simplicity of realism' is thereby lost, and reason is presented as a faculty

that develops in the direction of increasing complexity (PN 28–9).[10] Second, Bachelard notes that the mathematical a priori is a 'mere functional a priori, and has nothing of the absolute', which reflects the fact that the laws proposed are provisional and revisable (NM 77). Taken together, these conditions of the mathematical a priori mean that it can be closely aligned with Foucault's conception of complex historical conditions that are not drawn from empirical experience. What Bachelard took from mathematical science and passed on to others, including Foucault, is that what for Kant were transcendental conditions for the possibility of experience, and for the forms of judgement appropriate to it, have been removed from consciousness and laid out in the practice of mathematics. There, freed from what Bachelard calls 'an almost *quasi miraculous* accord between the principles of the intuition and the understanding' (PN 108), the conditions of experience are open to new forms of modification, which include historical change (and here one thinks above all of Léon Brunschvicg and Cavaillès) and the work of the scientific imagination as Bachelard understands it. Whichever form it takes, the fundamental requirement for unity that characterised Kantian transcendental conditions is relaxed, allowing for the ideas of a distributed rationality and a well-ordered dispersion proposed by Bachelard. As a corrective to some readings of Bachelard, however, it is important to appreciate that he did not entirely promote openness at the expense of coherence. Having made room for experimentation in the arrangement of intuitions and concepts, Bachelard was also conscious that mathematical categories continue to establish objectivity; the world is not by any means dissolved into a free play of imaginative construction and reconstruction.[11] Again, this recognition of the power of discourse to construct objects that appear in experience as real, with real relations and real effects, is also found in Foucault, both early on and in much later work such as *The Birth of Biopolitics*.[12]

Both the pluralism of the rational construction of experience and its coherence are reflected in Bachelard's account of time. In the 1930s, Bachelard wrote two books on time: *L'intuition de l'instant* (1932) and *La dialectique de la durée* (1936). Although he shared with Henri Bergson a concern that time should be a condition for the appearance of genuinely new phenomena, Bachelard's account of time was developed, or at least presented, in direct opposition to the work of Bergson. Recounting the failure of his attempts to find within himself the 'simple sweeping lines' of continuous time, Bachelard writes that he was drawn to ever smaller fragments in the hope that his perception of time might resolve either into a still image or into the pure flow of time as such. But he was always frustrated, as 'however small the fragment under

consideration, we had only to examine it microscopically to see in it a multiplicity of events' (TI 77).[13] The closer one attends to time, the more detail emerges, and so a belief in continuity can only be the result of being too easily satisfied by general trends. Instead, drawing on the work of the historian Gaston Roupnel, Bachelard developed an account of time based around the instant.[14] Time, he proposed, is made up of instants separated not by intervals (which would simply be periods of empty time) but by a temporal void, an absence of time. Since time was based on the instant and the instant was presented as an act, the void is associated with a state of repose. Time, therefore, appears first in the form of rhythm and frequency, and it is from these that one can construct temporal continuities. In spite of its clear association with atomism, Bachelard was wary of describing the instant as an atom of time because of the implication that time could be composed of a series of instants simply placed alongside one another – an idea Aristotle had long ago exposed as incoherent.[15] Instead, he proposed the arithmetisation of time. If, as Bachelard acknowledges, this idea was indeed drawn from the work of Roupnel, Bachelard added to it a good deal of his own. In particular, the idea of the arithmetisation of time resolves a problem that had concerned mathematicians for some time. While it was widely accepted that time and space were fundamentally continuous, at its foundations modern mathematics had exchanged the continuity of the line for the discontinuity of number. The gains in pure mathematical terms of the move to number therefore appeared to come at the cost of being unable to account for our fundamental intuitions of time and space.[16] Dealing specifically with time, Bachelard neatly turns this situation around by arguing that our intuitions of time as continuous were mistaken and providing in their place an account of time based on the discontinuity characteristic of number.

Having drawn his inspiration for this account of time from a historian, Bachelard reflects briefly on its implications for the study of history. Close attention, he writes, reveals that 'every action, however simple, must of necessity break up the continuity of life's becoming'. History is 'full of repetition and anachronism, of things attempted, of failure and fresh starts' (TI 71). Such events are not contained within time, and cannot all be allocated a place on a single scale where they can be compared. Different times emerge with the various patterns of their repetition, and accident is installed as a basic historical principle. One of the corollaries of the displacement of the conditions of experience from transcendental consciousness to mathematics is that the subject no longer secures the unity of experience, allowing time and history to settle into a wide variety of patterns that may not be entirely compat-

ible with one another, and which may overlap and interfere with one another, causing further variations. In science, this pluralism manifests itself in a multiplicity of theories and approaches that cannot be made into a whole from a single point of view. It is what Bachelard calls 'a well ordered method of dispersion'; and the philosophy that engages with such science is a dispersed or distributed philosophy (PN 12).

On the basis of the assimilation into mathematics of the categorial function of the understanding in Kant, Bachelard sets out an account of constructed experience as coherent but complex and irreducible to unity, as historical and plural. These initiatives suggest several points of proximity with Foucault's archaeology, although there are naturally also significant differences between them. The latter include a divergence over both the nature of the activity by which science develops new laws and the nature of the experimentation that gives rise to new objects and forms of thought. In archaeology, the activity of the subject, already displaced from its foundational role by Bachelard, is removed further still, as new events and transformations spring from the complex historical process itself.

3. JEAN CAVAILLÈS: GROUNDING THOUGHT IN ITS OWN HISTORY

Jean Cavaillès can be placed in the series of epistemologists and philosophers of science that runs from Brunschvicg via Bachelard, Koyre and Canguilhem to Foucault. In a now well-known remark, Foucault identifies this group as forming a second tradition of phenomenology in twentieth-century French philosophy alongside that constituted by the French reception of Husserl and Heidegger, and the original contributions of Merleau-Ponty, Levinas and others.[17] It may well be that in charting this second tradition of phenomenology in France, Foucault indicates at least as much about his own orientation as about the philosophers he names, since their relation to phenomenology is not immediately obvious. Foucault appears to regard Brunschvicg, Bachelard, Cavaillès, Koyre and Canguilhem as indicating a possible approach to the analysis of experience that is not grounded in the subject. Bearing in mind what Foucault writes about the analysis of actual experience in *The Order of Things* (see above pp. 9–11), such an approach would repeat a function previously performed by phenomenology, but in a quite different way. A line drawn roughly between the work of the five figures to whom Foucault refers will therefore be at best parallel to phenomenology, and may arguably converge towards it. If so, the point at which it intersects might lie in the work of Cavaillès. In fact, Cavaillès

engaged with Husserl's work for only a brief period, which culminated in the critique of Husserl presented in the final part of the long essay 'On Logic and the Theory of Science'. Famously, it is at the very end of that essay that, to clear the way for an adequate account of science, Cavaillès calls for the philosophy of the subject to be replaced by a philosophy of the concept.[18] In view of the trajectory followed by a significant part of philosophy in the second half of the twentieth century, this may be regarded as an astute anticipation of what was to come, but the importance of Cavaillès extends beyond this apparently prescient announcement. His work on the historical dimension of formal and rational systems set a precedent that others followed; in particular, there is a strong connection between Cavaillès' work and Foucault's critique of post-Kantian philosophy in its phenomenological form as well as his development of archaeology.[19] Cavaillès' exploration of the historical character of mathematical thought also led him to propose a notion of complex intuition based on a form of temporal pluralism. I will look at each of these in turn, after outlining the basic components and orientation of Cavaillès' philosophy.

The problems in the philosophy of mathematics that Cavaillès addressed revolved around the disputes over the foundation of mathematics in the early part of the twentieth century. Cavaillès was critical of the principal approaches to this issue, his reservations arising in the main from a concern that the provision of a foundation for mathematics should not rob mathematical thought of its capacity for generating wholly new ideas and conceptual objects. For Cavaillès, the status of mathematics as a deductive science had to be compatible with the potential for creativity. An examination of different approaches to the foundation of mathematics led to him finding fault with each of them in turn. Breaking with the Kantian framework, he denied a founding role either to transcendental consciousness or to the abstraction of rules of thought from physical reality. In addition, he opposed the logicist attempt to ground mathematics in logic, finding a naive realism in its definition of a set of elementary signs and the rules governing their organisation. Taking a constructivist line, he argued that even the most basic of mathematical objects is the outcome of antecedent acts and operations and that the history of such acts is complex, with no simple origin. In the early twentieth century, Luitzen Brouwer presented a theory of the foundation of mathematics called intuitionism that took a constructivist approach.[20] Cavaillès agreed that the objects of mathematical thought (and truths about them) were not simply there to be discovered. However, in his view, because intuitionism regarded mathematical objects as essentially linked to distinct mental acts, the devel-

opment of mathematical concepts was drawn back into the temporal flow of consciousness, covering over the uniquely historical character of their construction. To oppose this tendency, Cavaillès looked to the way Bolzano had separated demonstration as a method from the intuition that had continued to underlie it in Kantian thought; an idea that was adopted by Hilbert in his attempt to place mathematics as a formal discipline on an axiomatic basis. The separation of demonstration from intuition made mathematics a purely conceptual matter divorced from the conditions of consciousness, and had the added virtue of meaning that the foundation of mathematics did not lie outside it, in the mind, in experience or in any other structure or discipline. Moreover, the Hilbertian conception of the sign as a constructed object in its own right without any further representative function underpinned the independence of mathematical activity from empirical reality (whatever its eventual application may be). All this was viewed positively by Cavaillès. However, the idea that one could establish a purely formal ground for the totality of all possible mathematical expressions foundered with Gödel's thesis that it is impossible to prove the completeness of any formal system. As a consequence, the formal ground for any existent totality of statements has to remain subject to revision and development.

In a similar vein, Cavaillès' principal objection to Husserl in 'On Logic and the Theory of Science' is that to set out a foundation for science by defining the formal conditions for any possible theory and its objects will inevitably constrain in advance the possible development of that science. Given the capacity of mathematics for conceptual and methodological innovation, this could be an unwelcome constraint. The fact that Husserl allowed for an ongoing revision of the proposed formal grounds in the light of phenomenological evidence changed little for Cavaillès, since in his view mathematics itself should determine both what counts as a mathematical object and the forms of theoretical construction and methodology that it accepts, meaning that mathematics cannot be grounded in the transcendental activity of the subject. For if one were to trace an object back to its construction in this sense, one would arrive at a fundamental synthetic activity in consciousness that cannot itself be represented without lapsing into what Cavaillès describes as a confusion between the condition of representation and the representation of conditions, or between a 'procès effectif' and a 'procès effectué' (OC 470). Collapsing one into the other makes it possible for analysis to grasp the origin of thinking itself in a moment of apodicticity. But if the confusion is recognised, then the origin of thinking, the synthetic process by virtue of which objects are

given to consciousness, will always have already taken place and will thereby remain beyond the reach of thinking (except perhaps through an affectivity arising from a fundamental finitude). This is what, in *The Order of Things*, Foucault called the retreat of the origin, which held in place the doubling of the relation between the empirical and the transcendental and opened up the space of the finitude of man (OT 328–35, 339–46). As long as conditions are treated as transcendental, then thinking will necessarily be bound by this finitude, and so by the figure of man. Either there will be a confusion between conditions and conditioned, as Cavaillès finds in Kantian philosophy, including Husserlian phenomenology, or thinking will be cut off from its own conditions. In the latter case, thinking may relate itself back endlessly to an opening or origin that it cannot recover, or it may project that recovery into a future that awaits at the end of a path marked out by a suitable methodology. Rejecting these choices, Cavaillès proposes a distinctive understanding of the historical character of formal thought.

In so far as it is the act of synthesis, or construction, that gives thinking its object, there is always a process of some kind that precedes thinking itself. Rather than situate this in the depths of the transcendental subject, Cavaillès treats it as historical. Crucially, however, this is a history that cannot be assimilated to cultural history or a phenomenological conception of the lifeworld. It is a history of the transformations undergone by concepts and objects as they acquire their form at a particular moment, in a particular problematic. This is a distinct process, the character of which cannot be properly accounted for in terms drawn from other disciplines or domains of rational activity – which is what Cavaillès finds in Kant, as the structures and activities of consciousness pertaining to logic (though not exclusively) are carried over into the analysis of mathematical thinking. Similarly, Husserl's account of consciousness in terms of intentionality replicates the same tendency to place mathematical thinking within more fundamental, or higher order, structures that provide normativity at the expense of novelty. Returning to the idea that mathematics should not be grounded in any form of external principle, one can now see that if its foundation has to be immanent to mathematical thought, and mathematics is continually developing, then the foundation itself must have a fundamentally historical dimension; that is, it cannot simply be a revisable form posited each time as universal, or a provisional determination on a teleological path to completion. The challenge is therefore to understand what this really means, and how such an intrinsically historical character does not end up compromising mathematics as a science.

For Cavaillès, the objects of mathematical thinking are constructed, and this construction takes place in a pre-established context of rules and signs. As Cavaillès describes it, the rules for the use of concepts, and thus the generation of objects, are embedded in each stage in the history of mathematics and moreover are modified by each successive stage. This involves a process that Cavaillès calls 'thematisation', a form of reflexivity directed not towards the objects of an earlier stage, but towards the rules underlying their construction (OC 512).[21] Moreover, because the reflection is not guided by the objects constructed, each step and aspect of the process on which it reflects can be grasped for itself rather than as subordinate to the objects towards which it led. In this way, thematisation is the elucidation of what for Kant had been transcendental conditions. But whereas for Kant the conditions are necessarily fixed, for Cavaillès their thematisation is at the same time their transformation. Every element of this process is therefore undergoing continual change, which means that the conditions for the existence of objects at a given stage of mathematics do not define the formal limits of all possible mathematical objects; that is, they are not the conditions for the possibility of (mathematical) experience as such, as they would be for Kant. Instead, both the conditions and the conditioned existence are specific to a given historical moment. This has two important consequences.

First, given its historical character, there is a question over the unity of mathematics, which is necessary in order to secure its character as a science. Cavaillès proposes that it be found in the movement of the historical development of mathematics, a movement that has no absolute beginning and no end (OC 655). History, instead of being either a threat to formal unity or a process that can play a part only if it adheres to a formal rule, is itself the condition of the unity of mathematics. It is an autonomous movement conditioned immanently by its own history. But precisely because there is no transcendental or formal ground for this history, its unity cannot be stated in a principle, or easily represented (OC 504). Second, because there is no general law governing this movement, and no limits to the form it can take, the future of mathematics is unpredictable. Cavaillès goes so far as to say that the objects that exist at one stage of mathematics were impossible at the stage that preceded it (OC 470). This means that viewed from the present, even the immediate future is impossible and inconceivable. Inevitably, this raises the question of how any change at all can occur. First of all, while the construction of new objects in mathematics cannot take place without a mathematician to conceive them, they do not originate in the subject. Change occurs in the rules for the construction of objects, and

not just in the variety of objects and what can be said about them. This historical change is not itself governed by higher order rules, but neither does it come about haphazardly or by chance. For the problems that mathematics confronts call for solutions, and even though these may not be possible according to the conditions that determine the existence of concepts and objects when the problem is posed, the state of mathematics at the time will make certain changes to these rules more likely than others. At one level, then, demonstration unfolds through mathematics itself, and this will involve changes to the rules or conditions by which objects are formed, concepts combined, and so on. But in addition, the activity of the mathematician plays an important part, and this brings intuition back into the picture.

If the process of construction is defined as a rule, then for Cavaillès the intuition of a new mathematical object is not defined by a single such rule, but by bringing different rules into relation with one another, leading to the transformation of the whole domain of intuition (OC 470). Methods and theories undergo 'encounters and reversals', and as a result new rules for mathematical thinking emerge. Intuition reaches out beyond any individual schema that constructs current objects of mathematical experience, reconfiguring that experience on the basis of other schemata and, crucially, the changes that arise as a result of bringing them into contact with one another. The history that characterises mathematics is therefore not just a history of objects, concepts and methods. It is a history of the rules by which such objects, concepts and methods were excluded as impossible at certain times and demanded as necessary at others. Because the historical movement of mathematics encompasses not only its objects and its concepts, but also the rules of the operations by which they can exist and be combined, mathematics owes nothing to any external formal principles and can be described as autonomous. Mathematical intuition recognises this autonomy of the concepts, rules and procedures that are its objects simply because the conditions of such objects lie in antecedent acts within the same mathematical domain.[22] The role of intuition is therefore not to provide an original instance or point of evidence to anchor the analysis, and there is no 'first principle' or origin to which thinking can return. What is given in intuition, for Cavaillès, is, 'at each instant of its history, the system of objects addressed by mathematics at the time' (OC 578). As Cavaillès explains, the mathematical object is not constituted originally, but 'is always the correlate of acts (*gestes*) actually accomplished by the mathematician in a given situation' (OC 602). Along with the system of objects given in intuition, a system of acts is therefore also given. To track the conditions for the appearance of a particular math-

ematical activity one has to trace the history of these acts as it ramifies through various stages and contexts.

For Cavaillès, then, the construction of mathematical objects and their relations takes place through the demonstration of successive developments. However, because different stages of mathematics are constructed according to different rules, their objects and concepts cannot be schematised from a single view point. This means that mathematics is not only intrinsically historical, but also characterised by a temporal pluralism, even within what is for Cavaillès the unity of this history; something that is possible because mathematics is unified precisely by its history, and not by principles that define a stable ground or fixed framework. Finally, it also means that a historical analysis of mathematics has to follow the train of demonstration from within, re-enacting the moves that were made, rather than representing them from an external standpoint.

4. MICHEL SERRES: MATHEMATICS, EPISTEMOLOGY, HISTORY

Structure, regularity, multiplicity and temporal pluralism are just a few of the themes that feature both in the work of Serres and in Foucault's archaeology. In addition, there is in Serres' writing a sense both of the complexity of history and of the fact that its significance for philosophy reaches beyond being an area of study or a resource of possibilities. Moreover – and for a consideration of Foucault's archaeology this is very important – Serres did more than any other thinker of his time to open philosophy to mathematical modes of thought. Since Foucault emphatically rejects appeals to the idea of 'influence' in archaeological approaches to history, there is little to be gained by pointing out that Serres and Foucault were colleagues at the University of Clermont-Ferrand in the early 1960s and regularly discussed ideas that later found a place in *The Order of Things*.[23] However, there are many points at which their work intersects or is closely connected with respect to the relation between mathematics, epistemology and history, and I shall briefly outline a few of these here.

François Dosse identifies Serres as 'the first philosopher to define an explicitly structuralist global programme in the field of philosophy'.[24] Serres' background was in mathematics, not linguistics, and his familiarity with the history of mathematics, and in the twentieth century the work of Nicolas Bourbaki in particular, set him apart from the mainstream of structuralist thought.[25] Much of his work has been shaped by mathematical ideas of space, formal systems, multiplicities and series,

but it is perhaps in questions of methodology and the relation of the thinker to the matter of thinking that the influence of mathematics reaches furthest through his work – that is, mathematics exemplified a way of thinking from which philosophy could learn, even *had* to learn.

In the Introduction to *Hermes I: la communication* (written in 1961, though the book was not published until 1968), Serres endorses the structuralist emphasis on the formal at the expense of the attribution of meaning to individual elements in cultural and historical life, and sees no obstacle to the extension of this method beyond the fields of linguistics and anthropology where it had already been deployed. However, he is already aware of the limits of orthodox structuralism and critical of the way it deals with form and meaning. Whereas the critical discourses of the day moved between what he calls the classicism of a formal discourse concerned with truth and a romanticism that explored the meaning of our pluralistic historical and cultural life via its symbolic expression, Serres saw in structuralism an opportunity for critique to leave behind this uncomfortable conjunction of contrasting methodologies. However, the difference between the two forms of analysis is not easily overcome, and as long as it remains, structuralism at least risks falling into a division akin to that between positivism and eschatology described by Foucault in *The Order of Things*, thereby reproducing the same motif of finitude in a new setting. The problem concerns the status of the model or structure itself. For at the level of symbolic meaning, the model is to be constructed within the field analysed and the contents themselves are then understood as repetitions of a symbolic model, rather than as copies of an ideal form. But at the level of structural analysis the model appears to transcend the contents of a given field in so far as it allows one to identify patterns of relations between elements that are repeated in the structure of distinct fields. So either there are two senses of the model, or there is an ambiguity such that it is drawn from the field in question and yet also suspended beyond it, independent of the concrete cultural meanings that move in from different quarters to fill it out. To avoid this, and for the model to work as Serres wishes, there has to be a new relation between form and the concreteness of cultural life. This breaks down into a twofold task: first, to write a new account of scientific rationality, a new epistemology; then, to undertake a new form of critique directed at historical and cultural life. The second, Serres adds, is underway (which is presumably a reference to Foucault), but cannot be carried through properly until progress is made with the first – and, in spite of the lead given by Bachelard, at the time Serres was writing he regarded this as something

still to be done. The kind of changes he had in mind were already well established in mathematics, but his work, and to some extent also that of Foucault, would help to extend them to other fields.

For some time, Serres writes, epistemology has no longer been a prescriptive 'science of sciences' but rather a discourse in a meta-language that describes a particular 'regional' scientific practice (HI 66). But in the case of mathematics, epistemology has lost this role too. For mathematics 'has sufficient meta-languages to speak of itself, to describe itself, and even to found itself' (HI 66). As Serres puts it, epistemology is 'imported' entirely into the field of mathematics itself (HI 67) and there is no theory of mathematics beyond mathematics itself. The science of science, he writes, is no longer a view from above, but an internal and regional reflection (HI 65). Moreover, it is through such reflection that mathematics drives itself on to new developments. For reflection achieves fidelity to its object not by taking its distance from it (a condition of the disinterested gaze), but by repeating the movement through which the regularities that made it what it is were formed. This is necessarily a historical form of reflection. Moreover, the repetition adds to the pattern of regularities and therefore the reflection does not simply produce an image of its object, it transforms it; something that is possible only where there is no separation between language and meta-language.[26] Although Serres does not use the terms here, this mechanism is closely related to both 'thematisation' in Cavaillès and problematisation in Foucault.

The fact that description is already an intervention in the regularities that shape its object suggests that the classical distinction between descriptive and normative forms of epistemology needs to be reviewed. Classical epistemology sought to regulate the discourse to which it was addressed, to determine the conditions by which it could state the truth and the limits of its domain, and so forth. Since normative powers were acquired by virtue of standing above the regulated discourse, to abolish the meta-level would seem to entail giving up the right to being normative, leaving epistemology as purely descriptive. But Serres is quite clear that in so far as modern mathematics has become its own epistemology, it has also become self-regulating (HI 70). The integration of reflection into its own practice therefore brings with it a normative dimension, such that a careful description of scientific practice in a given field will reveal the norms by which that practice achieved coherence, with the power to determine its 'true' objects, concepts, methods and problems; and there is no reason why that description cannot itself contribute to the formation or modification of the regularities giving that determination its force. This will be important when reading Foucault's account

of the historical a priori as a set of conditions that are neither empirical nor transcendental.

Having made the case that mathematics has taken over the role of its own epistemology, Serres then remarks that the 'positive epistemology' emerging there is also emerging elsewhere, as other sciences, both natural and human, begin to do the same thing (HI 70). At this point, one might wonder whether Serres is describing the shift to naturalised epistemology well known in Anglo-American philosophy.[27] The question cannot be easily answered in a few lines, but two considerations suggest that something quite different is happening. The self-regulation that Serres has described in the case of mathematics is integrated into the practice of mathematics itself, and is not a separate branch of the discipline. As such, the reflection is at once quite specific, or narrowly defined, and ongoing. This appears to contrast with an example such as evolutionary epistemology, where principles from biology are applied to the development of knowledge in different areas, and with the granting of a certain authority in questions of knowledge to neuroscience and cognitive psychology (to name just two candidates). Moreover, in the examples mentioned, the epistemological application is extraneous to the practice and development of the field from which it was drawn and does not feed back into it. Thomas Kuhn's historical approach to science has more in common with what Serres is describing, but it, too, is relatively external to the science whose story it tells and doesn't contribute to it in any obvious way.[28]

These considerations lead Serres to speculate that a modern philosophy of science must take the form of a general epistemology of the positive regional epistemologies (HI 77). Contrary to how it might sound, this is not an epistemological analogue of a fundamental ontology. The primary point of reference is rather Leibniz, and the idea of a system with no privileged point of foundation. As a repetition at a greater level of generality of the same procedure as he has described in the case of the positive epistemology, a general epistemology will for Serres be the practice of translating between regions when there is no 'meta' level or language available from which to represent them and their relation to one another. If there is a point of divergence with Foucault, it is perhaps here: where Foucault aims to describe the emergence of regularities that shape discourses, which would include the regularities between them, Serres may be more likely to follow local trails, enacting relations and holding his analysis closer to concrete examples. This reflects a possible criticism of Foucault; namely, that he adopts a viewpoint that his own position should make inaccessible. This is not entirely fair, however, since Foucault is quite clear that an

archaeological analysis has no special privilege and could always be repeated with different results.

Serres follows Cavaillès in noting the significance of the fact that mathematics remains essentially what it is while at the same time undergoing continual restructuration and transformation, which he encapsulates by saying that mathematics is internally open, but externally closed (HI 72). As externally closed, it is separate from other sciences, and has made the epistemological problematic an element of its own practice. In addition, its closure to the outside involves the elimination of intuition, evidence, reflection and foundations, since in different ways they each call into play the subject (as sensible, rational, reflexive and transcendental respectively) (HI 72). Without the subject to provide a foundation, and without a fixed formal basis, order arises and sustains itself through the relations between the elements of the system. This is already evident in the opening section of the Introduction to *Hermes I*, where Serres outlines the idea of a 'network of communication' that draws on graph theory and cybernetics, and which is inspired in no small degree by Leibniz. Each point in the network counts as a thesis or a definable element in an empirical constellation, and each path represents a relation between two or more of the points. The network is irregular in the sense that the relations do not conform to a preset pattern and can be made increasingly complex by the addition of more paths, or the displacement of one or more points. In this way, the network can vary over time. The key thing for Serres is that this model frees thought from the grip of linear reasoning and dialectic, which now appear as restricted cases in a much wider set of possible relations between the points (HI 12–13). The points themselves may receive, and be determined by, many different communications simultaneously, meaning that 'the univocity of opposition is replaced by the differentiation of types and quantities of determination of which each summit is the extremity or the source of a plurality' (HI 14). This pluralism has a very significant consequence. The plurality of relations and the irregularity of the spatial distribution of the summits and the paths mean that one can conceive and test out or explore [*expérimenter*], local and temporary associations of points that form a well-defined group: 'In other words, it is possible to cut off from the totality restricted sub-wholes [*sous-ensembles*] that are locally well organized, such that their elements may more naturally be referred to this part than to the whole ensemble (although they are always referred to it in principle [*en droit*])' (HI 16). The first thing to say about this is that precisely the same form of organisation is found described by Lucretius, and again by Serres in his interpretation of Lucretius.[29] The second is that

the similarity between this and the account of statements combining in discursive formations that Foucault sets out roughly five years later is striking, and if anything is further reinforced when Serres adds that the highly organised local groupings defined in this way coexist with other such groupings, and that they can produce complex relations of interference, which may then modify the groupings themselves.[30] It is clear, writes Serres, that deductive reasoning and dialectic are 'too weak' to open up a distinction between the local and the global. Indeed, he explains, this is why such approaches end up proposing forms of totality that remain very difficult to define adequately. There is in this a significant methodological principle, which is that by generalising the methodology [*la technique méthodique*] (for example, by moving from the two dimensions of linear reason to the three-dimensional table) one makes possible descriptions of greater complexity and differentiation, and thereby gets closer to the reality one describes (HI 17). To increase the level of generalisation is like increasing the scale of a map.

As mentioned, this account of networks was inspired in good part by Leibniz, and Serres turns to Leibniz explicitly in *Hermes II*, published three years later in 1972. Casting Leibniz as a precursor of developments only receiving widespread recognition centuries later, Serres notes that different readers of Leibniz produce readings that are so divergent as to appear irreconcilable, but that this does not lead to incoherence. As in a network, the coherence of a system is not defined by the deductive relations between its various elements, since deductivity is only one form of coherence.[31] Instead, Serres writes, one can trace in Leibniz an itinerary that moves from one area of mathematics to another, gradually exploring it all. Moreover, each area of mathematics itself leads to a philosophical reflection on its own status: for example, from algebra one moves to nominalism, from the theory of numbers to the question of realism. Driven from within, 'mathematics is no longer theoretically *The* mathematics, unique and unitary by divine right' (HII 46). It is, he adds, a world; a rich collection of objects and experiences that are related without being bound tightly in a deductive system. Strikingly, Serres also notes that in tracing the form of that world and the relations between its parts, mathematics is closer to phenomenology than it might realise or wish. It is as if mathematics were drawing a map of the 'different functions or distinct regulations' of the understanding. In other words, he concludes, it is as if the world mapped by mathematics were itself 'a formal analytic of pure reason' (HII 46). This mathematical world is at once the set of objects to be experienced and the form of the understanding that gives structure to that experience. Philosophy can take note of it, but cannot add anything new, as it would once have done.

Serres sees mathematics as what Foucault might call an analysis of actual experience, but one in which the experience is a particular case, restricted to the world of numbers, algebra, sets, topological relations and so forth. However, it is distinctive in that the world itself is its own analytic; the rules that give form to experience take shape within that experience, and are not imposed from outside. In this respect, it modifies the analysis of actual experience that Foucault describes in *The Order of Things*, which, regardless of the intentions behind it, reproduced the doubling between positivism and eschatology that it sought to resolve into a more fundamental discourse. If mathematics is taken as providing a model that can be extended more widely, then one can see why Foucault called for a new critique of pure reason based on the mathematical a priori. Serres himself is quite sure that the model of mathematics can be extended in this way; or rather, that the extension has already taken place. In his study of Leibniz, he writes that the distinction between a scientific domain of activity and the philosophy that legislates for it is a 'a retrograde illusion of the moderns'.[32] Having split philosophy and science from one another, they have to invent epistemology as a way of bringing them back into relation. But the fact that epistemology exists sustains the very division it is intended to resolve. Reading Leibniz from the dubious vantage point of modernity, maintains Serres, we see him continually forging relations between mathematics and philosophy, but there is no such thing as a Leibnizian epistemology: 'there is always philosophy, even in mathematics, there is always mathematics, even in philosophy'.[33] It is in this sense that mathematics permeates Serres' philosophy. Less obviously, perhaps, it may also be in this sense that it runs through Foucault's archaeology.

5. MICHEL SERRES: ATOMISM

In 1977, Serres published *La naissance de la physique dans le texte de Lucrèce*, a reflection on *De rerum natura*, the exposition by Lucretius of Epicurean atomism.[34] Lucretius gives a materialistic account of the formation of galaxies, weather systems, the living world, the human mind, and much else besides, all of which emerge from a single iterative process repeated across different levels of existence. Moving from topic to topic, the account takes in physics, history, morality and other forms of knowledge, which themselves describe variations on the same material process. At least in part because the text is in verse, it has often been regarded as a non-rigorous exposition, but Serres takes a different view. Pairing it with Archimedean mathematics, he draws out a philosophically and scientifically coherent description that prefigures

both non-linear dynamics and contemporary theories of complexity and emergence.

Following Epicurus, Lucretius writes that all things are composed of atoms and void. Although the universe was not created and there is no origin as such, what Serres calls the 'first model' begins with an infinity of atoms raining down through the void in parallel lines. For collisions to occur, at least some of the atoms must deviate from their path. This deviation, which Lucretius calls the 'clinamen', occurs spontaneously, 'at an indefinite time and place'.[35] It has traditionally been put down as a chance event, but all this really means is that the event cannot be located in a causal chain: one doesn't know 'why' it happens. For Lucretius, however, this indeterminacy is a positive characteristic of the clinamen. The tiny deviations lead to collisions between atoms, turbulence and the formation of vortices in which atoms and combinations of atoms settle into patterns of regular movement. These vortices are the order we see all around us in the physical world and in every sphere of natural, social, economic and moral life. All order is therefore dynamic, a nearly stable recurrence whose dissolution will at some point begin to accelerate, the order breaking down and returning the atoms to the cosmic flux, perhaps to reappear in fresh configurations of order elsewhere.

Because order is the outcome of an essentially aleatory process, there are no laws that determine how atoms first combine to form groups and stable structures. As Serres writes, the 'pre-model of the fundamental physics has no laws' (BP 122). A law can only be expressed once a phenomenon occurs, as this involves a combination of atoms that is stable to at least some degree, and therefore displays some regularity. The laws that emerge here are 'just a federation', and like all federations they are localised in both space and time; that is, different spatial regions will be governed by different laws, and the same will be true of different temporal and discursive regions as well. The laws precede the system to which they are applied only in the sense that they have emerged from earlier stages of that same system: as Serres puts it, 'The law repeats the fact itself' (BP 123). Material order, knowledge and time are therefore interwoven. Each thing is itself history, as the condensation of a trajectory or flow that began by chance and settled into a regular form.[36]

Variations occur through an underdetermination within a local system, as a result of the clinamen, and through interference from competing regularities in other systems. Patterns of flow are therefore always local, complex and in transformation. Moreover, this localisation in the emergence of order is not operative only at the level of

physical reality. Although Lucretius' account describes history, the weather, morality, biology and much else besides as derived from the movement of atoms in the void, the absence of any fundamental and universal laws governing the movement of atoms (and the absence of any basic metric properties of the void), means that these higher order structures cannot be explained by reducing them to a more basic reality from which they emerge. So, for example, Serres can, and does, say repeatedly that morality is physics without conceding anything to physical reductionism. To put this another way, the sense of locality found in the spread of regularities at the level of the physical world is reproduced between discursive realities. Moving from physics to economics, or from history to morality, is like moving from one corner of the universe to another; there will be no predetermined way to move from the local to the global, and not even a marked out path from one locale to another – and all this in spite of the fact that in every region (physical and discursive) there operate the same principles of atoms moving in the void, turbulence, vortices and so forth. The system is the pattern of links, but as one does not begin with a whole that sets the conditions for the possibility of each part, the links have to be made. The atomism that Serres describes therefore does not permit the reduction of phenomena back to a set of 'basic' laws, but is rather a basic condition for the emergence of non-linearity, multiplicity, the unpredictable character of the future, and the necessity for an inquiry into any physical, historical, moral or discursive system to examine the patterns from which its phenomena are formed, patterns that will themselves have been formed locally by its history and its relation with adjacent systems. Because these patterns will have been formed by the relations between one system and another (and not just by relations between the systems en bloc, but also by cross-system relations between elements within each), there is little point in applying global theories to account for what has happened, or to predict what might be about to happen next. Such theories assume a degree of generality in the laws governing the behaviour of the elements from which a system is formed that may not actually exist. Underpinning such generality is a one-way relation between the law and what is bound by it: for example, Newton's laws of motion do not evolve with the systems they govern. By contrast, atomism proposes that the regularities both condition and are conditioned by the system they describe, and this commits the atomist to taking up a local perspective. The only instructive account is one that tells the story of local exchanges, and the trends that arose from them. Although what counts as 'local' will depend on the nature and scale of the system in question (it could be restricted to a specific

scientific specialism, or to a form of thought, such as atomism itself, that has recurred over many centuries and in different scientific and philosophical cultures), analysis is still drawn to specific forms embedded in actual events and phenomena. Its medium is therefore history before it is philosophy (or at least any kind of philosophy that aspires to foundationalism). Moreover, the act of thinking and writing is itself a material act that intervenes in the same process, potentially leading to the modification of the pattern of links. Echoing Serres' description of the system in Leibniz, this means that a conception of the system as a whole (indeed, of any given system of related regions) involves the relation of all the regions – and that to conceive of this totality of relations one must map them. Because there is no formal and invariant set of relations binding the regions into a whole, the map you end up with will depend on where you begin, on the path you strike, and perhaps even on your preferred mode of travel (which will determine the level of detail one can take in).

Whereas for Cavaillès the history of mathematics was necessarily a unity constructed through its movement, for Serres history is at once generalised beyond mathematics and localised into pockets, patches, or worlds of order that may flow into one another without being formally continuous.

6. THE MATHEMATICAL A PRIORI

When Foucault introduces the idea of the analysis of actual experience in *The Order of Things* he invokes the Kantian legacy that shapes the situation in which it arises. The analysis of experience, he writes, is intended to stand between the empirical and the transcendental, bringing them into relation by analysing man as 'a locus of knowledge which has been empirically acquired but referred back as closely as possible to what makes it possible, and as a pure form immediately present to those contents' (OT 320–1, 331). It is intended, in short, to bridge the gap between a determination of man as object and as subject. Foucault goes on to say that such an analysis would play the role of an analytic 'in relation to quasi-aesthetics and quasi-dialectics' (OT 321, 331). In the *Critique of Pure Reason*, Kant allocates sensibility to the transcendental aesthetic, understanding to the transcendental analytic, and reason to the transcendental dialectic. Foucault thereby implies that the analysis of actual experience plays the role of the analytic situated between the positive sciences and the questioning after their unconditioned ground (the quasi-aesthetics and quasi-dialectics respectively). In addition, the analytic is where Kant deduces the categories of the

understanding, derives the idea of the subject as the transcendental unity of wapperception, and introduces the transcendental imagination as the operation of synthesis by which concepts and intuitions are brought together to constitute experience. All this will be important when considering how archaeology can be seen as Foucault's proposal of an alternative to the analysis of actual experience. But first there are a few points to note. The need to introduce an analysis of actual experience only comes about because, after Kant, the role of the analytic came to be taken over by empirical sciences such as psychology, as well as various forms of naturalised philosophy that have sought to provide their own account of the conditions of experience. One need only look at the alliance between neuroscience and cognitive science today to see that the project has continued into the twenty-first century. As I have outlined in the previous section, Foucault thinks that the analysis of experience fails to solve the problem it addresses because it gives too much away to the branches of inquiry it is supposed to reach beneath and ends up falling apart into an empirical component and a transcendental component.

When looking at Foucault's own development of archaeology and the idea of the historical a priori, one may wonder whether the lesson has been adequately learnt, and whether archaeology can avoid a similar fate. This is something on which I hope the commentary on *The Archaeology of Knowledge* that follows may shed some light. But there is an important clue as to how Foucault proceeds given near the end of *The Order of Things*. In the course of a discussion of mathematics, language and literature, Foucault writes that the interest in formal languages opens up 'the possibility, and the task, of applying a second critique of pure reason on the basis of new forms of the mathematical *a priori*' (OT 383, 394). Having announced this tantalising challenge, Foucault moves on without further comment. However, the reference seems to be to Bachelard's proposal that the synthetic activity which forms experience should no longer be protected deep within the subject and bound to sensible intuition. Transcendental conditions are opened up and give way to mathematical construction, from which forms of experience arise that were previously impossible, or even inconceivable. Foucault regards this displacement of the construction of experience from the subject to a formal discourse as contributing to a possible reformulation of Kant's critical project. But what is the relation between a priori conditions modelled on formalism in mathematics and the notion of the historical a priori that Foucault goes on to develop in *The Archaeology of Knowledge*? Two points stand out as important. First, the conception of mathematical formalism to which

Foucault is referring is almost certainly that of Cavaillès, whose work on formalism was widely known, in part as a consequence of editions prepared posthumously by his close friend Canguilhem.[37] If Cavaillès' understanding of mathematics as an autonomous formal discourse that is also historical were adopted, then re-applying the critique of pure reason on the basis of the mathematical a priori would mean putting in place a discourse that supplies conditions for experience that are historical, not transcendental. Yet, as formal, they would be irreducible to the level of empirical experience. In this way, a critique based on the mathematical a priori would avoid the split that led to the analysis of actual experience falling back into empirical studies on the one hand and a transcendental component on the other. Finally, the turn to mathematics would mean that the fundamental event with which the analysis of discourse deals is construction, not disclosure. This would at least extend the possibility that the analysis of discourse might shake off the nagging presence of the unthought, and the impossibility of taking hold of the origin from which its relation to the unthought springs. This is certainly implied by Cavaillès' critique of Kantian philosophy in the essay 'Transfini et continu', where he points to the inevitability with which the construction of objects (and thus of experience) in transcendental philosophy must elude all representation; or, more specifically, that the *time* of construction must elude representation, thereby itself becoming the unconditioned ground (OC 470). As a consequence, an analysis of discourse based on the mathematical a priori would avoid what Foucault describes as the return and recession of the origin, the movement that both shapes the analysis of actual experience and reinforces the figure of the finitude of man at the centre of the whole drama of thought in modernity. It remains to be seen, but taken together these considerations therefore suggest that an analysis based on the mathematical a priori can avoid what Foucault describes as the 'doubling' characteristic of the earlier attempts to provide an account of the conditions of knowledge in modernity. If it can, then it opens up the prospect of a form of thought that no longer turns on the figure of the finitude of man, and which is no longer structured by the tension between the empirical and the transcendental. There is a great deal to clarify here, but one of the main points Foucault will have to address is simply what it means to assert the existence of a condition that is neither empirical nor transcendental; that is, how a condition can be a non-causal condition of experience, without standing above or apart from the experience it conditions. The two alternatives seem to exhaust all conceivable possibilities. Yet the mathematical a priori does offer an alternative, as long as one takes seriously the role of history and is prepared to reinterpret

time in the account of what used to be synthesis and has now become the historical construction of experience (its objects, concepts and the modalities of the subjectivity associated with them). To see how Foucault tries to make this work, and to evaluate how successful he was, requires a familiarity with the work of Cavaillès, but also with two further ideas. The first of these is the idea of rules as regularities. Arguably, the most important historical source for this is mathematics, where rules play a vital role in the process of construction. However, Serres' study of Lucretian atomism in *The Birth of Physics* provides an extended and in many ways more relevant elaboration of the idea. This has been covered above. The second is that of temporal dispersion, which features in *The Archaeology of Knowledge* having first been introduced in Foucault's Introduction to Kant's *Anthropology*.[38]

7. TEMPORAL DISPERSION

The theme of temporal dispersion is raised early on in *The Archaeology of Knowledge* and is never too far from the analysis as it unfolds. Its importance rests on the fact that it is the temporal form Foucault associates with archaeological history, in so far as this takes over from the analysis of finite experience. The analysis was intended to hold together the figure of man as a transcendental-empirical double, and to ground the twin tracks of thought that Foucault calls eschatology and positivism. Since the finitude of man has been addressed primarily in terms of time, to understand what has become of thought as modernity comes to an end, and why Foucault is proposing archaeology as an approach to history, one has to clarify the form time takes when it is no longer bound to this finitude, and to the condition of unity that it imposes. Although Foucault gives very little away in this respect, it is clear that for him dispersion is the basic temporal structure of discourse. I shall cover two points here. The first is the strategic role played by the idea of temporal dispersion, which will involve looking briefly at both Foucault's and Heidegger's responses to Kant's anthropology. In addition, it will be important to clarify what is meant by temporal dispersion itself.

In *The Order of Things*, Foucault describes how anthropology took on a central role in modernity when Kant referred the three basic questions of critical philosophy (What can I know? What must I do? What am I permitted to hope?) to a fourth: What is man? (OT 341, 352). With this move on Kant's part, the question of the relation between knowledge and its ground opens up in the direction of what Foucault calls the analytic of finitude. For Heidegger, it is a significant moment in so far

as it appears to respond to his own concern that Kant's critical philosophy lacked a radical foundation because it failed to ask the question of the Being of the subject.[39] But Heidegger remained critical, arguing in *Kant and the Problem of Metaphysics* that Kant's anthropology did not compensate for this omission and remained an empirical inquiry that failed to open up an ontological analysis of the subject. In *Being and Time*, Heidegger responds by laying out an analysis of the ontological structure of Dasein as that being through which Being is disclosed, and the analysis is then made properly ontological in Division Two of *Being and Time*, where Heidegger sets out the temporal structures that underpin it. Foucault's response to the way Kant makes the question of man fundamental diverges significantly from Heidegger's approach.

Making the question of man fundamental means that any inquiry into the role of construction in human experience and what can be known of it is sent on a detour through anthropology; in effect, the itinerary of the *Critique of Pure Reason* is made to pass by way of the *Anthropology from a Pragmatic Point of View*. However, where Heidegger thinks this leads Kant into empirical inquiries that distract from the ontological problematic, Foucault finds something that, in his view, helps to set in train the disappearance of man that will carry thinking free from the division between eschatology and positivism (or the transcendental and the empirical). It is, however, only an indication, since Kant's anthropology is in Foucault's view articulated within the structure that has to break down for thought to move free of the pattern set for it by the figure of man as an empirico-transcendental double. Foucault draws attention to the different roles played by time in the *Critique of Pure Reason* and the *Anthropology*, a difference which arises from the nature of the *Anthropology*'s inquiry into what the human individual 'as a free-acting being makes of himself, or can and should make of himself',[40] not only by shaping his conduct, but also by cultivating his sensibility, understanding and taste. Kant explores this firstly through a rehearsal of structures familiar from the *Critique of Pure Reason* (sensibility, understanding, reason), and then through a consideration of pleasure, displeasure and desire that takes in discussions of topics such as distraction, mental illness, dreams, wit, boredom, eating alone, and much else besides. This treatment contrasts sharply with that adopted in the *Critique of Pure Reason* where the subject is divided between a transcendental unity that anchors the operation of the syntheses and the empirical self that appears as an object of sensible intuition, the whole account thereby conforming precisely to the figure of the empirico-transcendental double that Foucault identifies in *The Order of Things*. By contrast, in the *Anthropology* the subject

engages in an elaboration of itself *as a subject*. Lodged in a dimension bounded by a priori conditions on one side, and the empirical fact of its existence, language and the time that carries events on around it on the other, the subject tries out variations, each of which may be modified or undone in turn. As it does so, the subject draws the two sides together, causing 'the practical and the theoretical to intersect', a convergence that Foucault describes in terms of freedom and truth (IK 92). Foucault explains that this intersection has a distinctive temporal character. In the *Critique of Pure Reason*, he writes, the multiplicity of the given is presented by a form of intuition and inner sense through 'a constructive activity that is already at work' (IK 89). As such, it is presented in the form of unity, anchored by the transcendental unity of apperception. By contrast, the time of anthropology is 'assured by a dispersion which cannot be contained' (IK 89). The reason it cannot be contained is that in the *Critique of Pure Reason* the dispersion would have been associated with sensibility and contained by the synthetic activity that shapes experience and gives it unity, whereas here in the *Anthropology* it is 'the dispersion of the synthetic activity with regard to itself' (IK 89), the non-coincidence of synthesis with itself as it works through time. By virtue of this structural incompleteness, Foucault writes, the time of the *Anthropology* eats away at the coherence of synthesis from within, making room for error, correction, repetition, and thereby also a certain freedom (IK 91). This imposes a different task on theoretical thought, now entangled with the practical. It can no longer track back to a beginning, whether it be fact, law or the structures of the a priori. Instead, it has to articulate, and thereby recover, the temporal framework in which it exists. It has to relate itself to time. Foucault concludes from this that Kant's *Anthropology* introduces a new demand for thinking: 'repeat the a priori of the *Critique* in the originary, that is in a truly temporal dimension' (IK 93).

Like Heidegger, then, Foucault sees time as the key to Kant's anthropology; and like Heidegger, Foucault tries to identify the temporal structure of synthesis itself. However, where Heidegger directs his attention to the temporal dimension of the synthetic activity of the transcendental imagination, restoring its priority over the dispersion of what he calls the time of the everyday, Foucault follows the movement that Kant initiates in the *Anthropology* and re-situates the question of time within the dispersion characteristic of the practical life of man. The mixed character of the analyses there were enough for Heidegger to dismiss them as too empirical to have any ontological significance, but for Foucault it is precisely by virtue of this mixed character that the analyses promise to break down the dichotomy between eschatology

and positivism that defines modernity. Paradoxically, it is in Kant's *Anthropology* that Foucault finds the first traces of a process that will lead to the disappearance of man.

However, the account as it is given in the *Anthropology* only indicates a possibility for the future, as the structures that Foucault believes will break down with the disappearance of man are still holding firm. Referring to time in the *Anthropology*, Foucault writes that it maintains the dispersion of syntheses, but also the possibility that they 'elude one another' (IK 89–90). Time, therefore, 'is not that *in* which, *through* which, and *by* which synthesis is achieved; it wears away the synthetic activity itself' (IK 90). The implication is that time affects synthesis, if not from outside, then still as paired with it in some way, intimately there to undo its work. In this separation, however slight, the doubling of the transcendental and the empirical is repeated and the figure of man sustained. When Foucault writes that the a priori of the *Critique of Pure Reason* has to be repeated 'in a truly temporal dimension' (IK 93), he appears to be proposing not simply that the a priori be related to time (as if the formal were to be subjected to time), but that it should itself be temporal. If it were objected that synthesis is already a temporal process and that this is just what Heidegger emphasised in his reading of Kant, one can point out that such a process is held in a privileged position, with priority over the dispersion of time as the order of empirical events. To repeat the *Critique* in a temporal dimension means that the a priori must genuinely take shape in and through a temporal process, that the separation between synthetic activity and its undoing be reduced entirely. Dispersion would then not be a secondary process, but rather the operation of synthesis itself, only as a process that is always incomplete, and in which the condition of the formation of experience is at the same time the condition of its transformation.

It is worth noting that language plays an important role here, too. If time itself is the dimension of the 'original' (*l'originaire*), Foucault endorses the view that it 'is not to be found in an already given, secret meaning, but in what is the most manifest path of the exchange' (IK 102–3). This becomes problematic, in Foucault's view, because Kant adopts a 'popular' idiom for the *Anthropology*. By appealing to a common language, shared between author and public, it encourages the belief that in spite of the dispersion of time, something clear and whole is nonetheless given, or at least is almost within our grasp. The *Anthropology* takes up a language that is already familiar from the common understanding of the world and uses it to grasp the human. But in this way, time is confirmed as an order of empirical events, the separation between the a priori and its dispersion is maintained, and

the radical potential of temporal dispersion is tempered, if not lost altogether. For the transformative potential within the *Anthropology* to be realised, the screen of self-evidence placed around it when Kant cast anthropology as a 'popular' discourse has to be removed, and this is something that one can see Foucault undertaking in works published later in the 1960s (no one can pretend that *The Archaeology of Knowledge* adopts a common idiom). Moreover, mathematics plays a significant part in all this. First, as Bachelard stressed, modern mathematics no longer constructs its objects in alliance with sensible intuition, and for this reason it will almost by definition speak a language that is unfamiliar. Then its formalism, albeit thoroughly historical for someone like Cavaillès, ejects the subject from its central role in the drama of thought in modernity.

Finally, Foucault's remarks on the need to repeat Kant's critical philosophy in a truly temporal dimension can be read alongside his proposal in *The Order of Things* that it be repeated on the basis of the mathematical a priori. These features are played out through Foucault's account of archaeology, and in particular in the way it suspends ready-made unities, in its exposition of history as the gradual, piecemeal and provisional formation of such unities, their temporary stability, and their ultimate deformation. In this way, the operation of synthesis is exposed to temporal dispersion more radically than before, with the result that the closed dimension in which the figure of man was lodged (his last refuge?) is thrown open. Of course, this does not mean the end for any consideration of the subject, or of the subject's role in thought, as the remainder of Foucault's work very clearly demonstrates. But it does entail a serious revision of both the form and aims of thinking, and this entails changes in the way that the subject is involved in the practice of thinking – a theme that recurs in *The Archaeology of Knowledge*, and which is addressed below in the sections on the Introduction (p. 41), III.4 (p. 105) and the Conclusion (p. 152).

COMMENTARY ON *THE ARCHAEOLOGY OF KNOWLEDGE*

PART I: Introduction

Historical accounts can be pitched at different levels and these will generally change at different rates. 'Deeper' strata, such as the histories of sea routes or crop rotation, move more slowly than the 'surface' histories of governments and wars, and this means that different kinds of methodological questions are asked. A concern with how to establish causal sequences or whether totalities can be defined from a nexus of relations gives way to questions over what type of strata should be isolated for study, and the periodisation that should be adopted (AK 4, 10). While the focus in history was moving towards patterns on a large scale, specific histories dealing with strands of culture and knowledge (e.g., the history of ideas, of science, or of literature) appeared to move in the opposite direction towards a concern with rupture and discontinuity. The figures Foucault mentions in outlining this second tendency are among those whose work is most clearly a point of reference for the analyses that follow: Gaston Bachelard, Georges Canguilhem, Michel Serres and Martial Guéroult.

Of these, Bachelard arguably made the most influential contribution through his understanding of science as an open and episodic invention of new realities that are not drawn from empirical experience. Although Foucault does not mention them in the Introduction, Bachelard's convictions that philosophy should learn lessons from the mathematical sciences, and that it should not impose on scientific thought a conceptual framework that science itself had left behind, were also both important for the notion of discourse and its analysis that Foucault introduces in this book, as was Bachelard's writing on temporal atomism, or the arithmetisation of time (these themes are discussed in the section on Bachelard above). Canguilhem recognised that concepts have singular histories that do not usually conform to the pattern of gradual refinement, and focused attention on how the rules that determine the use of

concepts change. His attention to variations in the way concepts occur in different contexts, and on the fact that histories take on different formal or structural features according to the scale of the analysis, both have great significance for archaeology. The work of Serres is at least as significant for Foucault's thought in this period. Here in the Introduction, Foucault mentions the idea of recurrent distributions and its importance for historical description, but he might also have mentioned Serres' understanding of how the fact that mathematics had become its own epistemology had changed the practice of history and of philosophy, his appreciation that thinking is too rich and varied a practice to be defined by narrow rules or principles of any kind, his temporal pluralism, and finally (in this short and incomplete list) his appreciation that contingency and indeterminacy are not extrinsic to the emergence of rational systems. In relation to this last point, Serres' interpretation (or assimilation) of ancient atomism is also important, not least for the conception of rules as regularities which will be essential to almost everything that Foucault has to say about discourse and the historical a priori. Martial Guèroult is a lesser known figure in the English speaking world, but his books on Descartes and Spinoza were influential for those who regarded philosophical thought as a systematic order, rather than the inspired creation of an individual mind. Foucault refers to Guèroult's focus on internal coherences, compatibilities and connections, but he might also have noted his antipathy towards hermeneutic philosophy, which is shared by Foucault at several points in *The Archaeology of Knowledge*.

If one were to select some of the main points that can be drawn from each of the four figures the Foucault mentions here, the list would give a very good indication of what lies ahead: the constructive character of thinking no longer tied to sensible intuition; the complexity of the history of concepts as it spans different scales; temporal pluralism and the ordering of discourse by regularities; and the importance of attention to the systematic character of coherences and connections that work both within and across the forms of unity that are usually taken to populate discourse. The historical analyses to which Foucault refers aim to uncover not underlying principles and foundations but rather limits and transformations (AK 6, 12–13). Familiar questions give way to new ones concerning the specification of different forms of discontinuity and the criteria by which one is to isolate the unities that do feature (science, oeuvre, theory, concept, text). These are in fact questions to which Foucault's analysis of archaeology intends at least to begin providing an answer.

As Foucault notes, it appears as though the history of thought, philosophy, knowledge and literature has been moving towards dis-

continuity just as 'history itself' has been moving in the other direction towards the study of greater continuities. But this is not so, he explains, since, 'In fact, the same problems are being posed in either case, but they have provoked opposite effects on the surface' (AK 6, 13). The two approaches intersect at the document. This, Foucault writes, is no longer treated as 'the language of a voice since reduced to silence' (AK 7, 14). That is to say, the aim of history is not to learn more about a subject whose expressions are everywhere and yet whose truth remains obscure. Instead of committing itself to the elucidation of man, history works with and on documents to explore the various patterns into which they spontaneously fall or can be fitted. Achieving this will mean splitting history from memory. What this means in a more concrete sense can be seen in Foucault's example of the relation between the document and society: history, he writes, 'is one way in which a society recognizes and develops a mass of documentation with which it is inextricably linked' (AK 7, 14). Such an approach rules out treating society as a collective subject that can be the unifying ground of all the documents, while also ruling out society's dependence on some other (presumably external) principle for its existence as a unity. Instead, it is in and through history that society coheres, even as a good deal of historical study appears to seek out discontinuity and division.

Again contrasting two apparently conflicting approaches to one another, Foucault observes that if history once aimed to transform 'monuments' into documents, giving voice to an otherwise silent expression rising from the past, now it does the reverse, turning documents into 'monuments'. This has four consequences, which Foucault sets out over the next five pages, and which explain how the two apparently conflicting accounts of history outlined in the chapter so far are in fact just surface effects from the same process.

First, where history once forged causal links between empirical events, it now constitutes series, and series of series, adding layers to form tables. As Serres writes in the 'Introduction' to *Hermes I*, the line as a model is exchanged for the table, in which the route (or ensemble of routes) actually followed in the evolution of any mobile situation, including history, is picked out from what can be an entirely aleatory distribution (HI 13). This allows historical description to map greater complexity, but faced with more alternatives than ever before there is a need for a more subtle discrimination between different kinds of event, and between the forms of relation that exist between them. This in turn leads to a recognition that different kinds of event are linked over different scales. The appearance of long time-scales in historical studies can therefore be seen as following from the deliberate methodological

decision to develop series (AK 8–9, 15–16). Conversely, the history of ideas, of thought, and of the sciences have seen the same change bring about the opposite effect as longer series organised by, for example, the teleology of reason are replaced by shorter series that are 'irreducible to a single law' (AK 9, 16).

The second consequence is that discontinuity takes on a role of central importance in contemporary history. It had always been the task of the historian to take the raw material of discontinuity and work it into a form of unity, demonstrating the relation between apparently disparate events, discovering the common principle they share, or the hidden narrative. Its role in contemporary historical analysis is quite different. As Foucault writes, seeing discontinuity as a constituted condition rather than an intrinsic quality of events in their raw state almost obliges the historian to reflect on the way different levels of analysis are distinguished from one another. But in addition to being produced by historical discourse, and used by it as a methodological device, discontinuity is also studied in the variety of its forms. As such, it switches from concept to object and back as history hones its descriptive tools not on a fixed external reality but on a constructed experience. One might object here that an account in which history is at once construction and constructed is at risk of losing touch with 'reality' altogether and entering the realm of fiction, but the sense of history intended here comprises the formation of the rules by which objects, concepts and methods are 'there' for us at all. As such, the 'realist' objection would always be raised too late, having neglected the conditions for the experience on which it is based. More troubling may be the concern that history itself has taken over the structure that in modernity belonged to the figure of man as an empirico-transcendental double, as both the object of knowledge and the ground of that knowledge. If so, then archaeology will have failed to break out of the closure Foucault described in *The Order of Things*. Whether archaeology manages to avoid this difficulty remains to be seen.

The move from a linear to a tabular model of history is reflected in the replacement of what Foucault calls total history by general history. Where the former finds the same kind of relation between events repeated in different series, which therefore become linked analogically, general history determines the specificity of such series, with their particular limits, divisions and forms of relation. It then considers what relations may be found between such series, or elements within series, and what effects follow from their displacement with respect to one another or their superposition on one another; in other words, it considers 'what "tables" it is possible to draw up' (AK 11, 18–19). Where

a total history occupies a unified space organised around a central principle of some kind, general history ramifies through 'the space of a dispersion' (AK 11, 19). The idea of dispersion features repeatedly in Foucault's analysis, often with reference to time rather than space, and this is a first clue in the text itself as to how it is used. It appears that 'dispersion' does not designate a scattering of points or elements *in* either time or space, since this would assume a unified dimension, which would in turn imply the existence of a single principle, thereby returning the analysis of experience back to an analytic of finitude in the style of phenomenology. Instead, 'dispersion' designates a multiplicity of times or spaces that may or may not be compatible with one another, and which may be modified structurally through their contact with other times or spaces. The dispersion is therefore operative first of all at the level of rules, rather than things, events or elements. In addition to being irreducible to the unity of time characteristic of phenomenology, this also departs from a reading of dispersion in Kant's *Anthropology* as the work of linear time (cf. pp. 36–7 above).

The final consequence of the new relation to the document is that a series of methodological questions have to be addressed, some of which are new and some of which are quite old. If bodies of documents are to be assembled, principles of choice have to be established, levels and methods of analysis defined, and various groups and sub-groups determined.

All these problems show that the methodological issues confronted by the new practice of historical analysis have not been taken over from the philosophy of history as traditionally understood. While the set of problems identified is not unique to archaeology, Foucault denies that they can all be grouped under the heading of structuralism. There may be several reasons for his reluctance to do this. First of all, structuralism as it was predominantly understood at the time had been drawn primarily from linguistics and ethnology, whereas archaeology is shaped by developments in mathematics and the sciences, as filtered through the works of Bachelard, Serres, Cavaillès, Canguilhem and others. Interestingly, Foucault also notes that many of problems addressed by the form of history he is describing were taken over from the discipline of economic history (one of the main areas analysed in *The Order of Things*), which suggests that the specific choices this involved and their impact on the practice of archaeology might themselves be an interesting topic of analysis. Second, linking archaeology to structuralism would encourage an easy assumption of methodological stability that Foucault discourages. One of the reasons why *The Archaeology of Knowledge* can be a challenging and sometimes frustrating book to

read is that archaeology has a certain openness and revisability built into it. Foucault's closing remark in this section is that the opposition between structure and development has little or no relevance to the practice of history he is describing, and that historians have not been troubled by it for a long time. Although no explanation is offered, one suspects that the perception of a conflict between structure and development has troubled philosophers rather more than anyone else, and that this may say more about the conception of structure prevailing in philosophy than about the carelessness of practitioners in other fields. It was certainly not a concern for Cavaillès, for whom the structure of science was strictly identified with demonstration, and thereby with the movement unfolding through it. For him, 'There is in reality no essential distinction between the hardened rings which seem to mark the terms and the movement that traverses them' (OC 507). One can certainly say that the archaeological analysis of discourse requires a close alternation between construction and constructed, condition and conditioned, and therefore also between structure and development. Again, this draws attention back to the question of whether archaeology avoids the doubling of the transcendental and the empirical that Foucault identifies as constituting the impasse for knowledge in modernity, and it is a theme that will run through much of what follows.

Foucault observes that the 'epistemological mutation' of history is still underway (AK 12, 21). He attributes its inception to Marx, but goes on to reflect that history, and especially the history of thought, seems to have resisted the change. It is, he writes, as though our desire to see in history a means to the recovery of an origin has left us 'afraid to conceive of the *Other* in the time of our own thought' (AK 13, 21). This is a striking phrase. In spite of its Levinasian resonances, it is less an allusion to alterity in a directly ethical sense than a warning against treating time as a unity and, through memory, as the privileged form of interiority. The time of discourse is temporal dispersion, and to welcome the *Other* into the time of our own thought is therefore to expose 'our own thought' to an unpredictable becoming. This, it turns out, will prove to be the condition of thinking; that is, the critical and transformative practice Foucault elaborates as archaeological analysis (see AK III.4; below p. 108 and p. 157). Opposed to this, continuous history is 'the indispensable correlative of the founding function of the subject'; it is the promise that anything that is lost will be restored, that any disruption, revolution or catastrophe is encompassed by the consciousness to which it is presented (or the spirit of which it is a passing manifestation) (AK 13–14, 22). To believe in such a promise is to defend the sovereignty the subject, and thus also to preserve the central

function of anthropology in the structure of knowledge in modernity. It leads, in Foucault's view, to readings of Marx and Nietzsche that place them in the tradition of transcendental philosophy while misleadingly declaring a commitment to 'the living openness of history' (AK 14, 23). The litany of complaints that Foucault directs against this kind of interpretation makes it quite clear that history is a crucial staging post in the disappearance of man and the reconfiguration of knowledge at the end of modernity. Archaeology, he insists, does not do away with history, but only with a form of history that serves as 'a place of rest, certainty, reconciliation, a place of tranquillized sleep' (AK 16, 24). To some extent the analyses that follow codify the approach that Foucault had already put into practice in *The History of Madness*, *The Birth of the Clinic*, and *The Order of Things*, but he admits that they also include corrections and criticisms of his earlier work. Above all, *The Archaeology of Knowledge* is attempt to lay out an alternative form of history, one in which the functions previously accorded to transcendental philosophy are taken over by history, and in which a priori conditions are historical without being reducible to the empirical level. As I have noted already, it is a conception of history prefigured in works on the history and epistemology of the mathematical sciences by Bachelard, Cavaillès, Serres and others.

Part II: The Discursive Regularities

1. THE UNITIES OF DISCOURSE

In this first chapter Foucault sets out a series of methodological decisions that inform the analyses to come, outlining his conception of discourse and the idea of the statement that will be central to much of what follows. The unities to which the title of the chapter refers are those around which historical studies were, and still are, commonly based, and which in Foucault's view have been accepted at the cost of reinforcing the constraints from which thinking in modernity has struggled to escape. Archaeology, it is intended, will break them down to reveal their construction and transformation, exposing to view a level of events that had previously been concealed behind a façade of ready-made concepts, subjects, objects and assumptions about the nature of change.

The chapter begins with a list of concepts that Foucault proposes to use, or whose use he will analyse: discontinuity, rupture, threshold, limit, series and transformation. With the exception of 'rupture', all of these terms are derived from mathematics and were, at the time Foucault was writing, most rigorously defined there. Even the term 'rupture', apparently the odd one out, is associated with Bachelard's philosophy of science (where it designates the discontinuity between science and the forms of understanding that precede it), and so can also be traced back to the same neighbourhood. It is clear then, even without placing Foucault in relation to Bachelard, Cavaillès and Serres, that his text will draw on resources from science and mathematics to undo habits of thought entrenched in philosophy, and above all in forms of thought allied to the human sciences through their shared commitment to the idea of the human. But seeing these terms occur here, it could be argued that they should first be defined as they are

employed in mathematics, and this benchmark then used to determine whether Foucault has adopted them 'properly', or is somehow employing them 'illicitly' for his own ends. This would be a mistake, because one cannot prohibit concepts arising in one field of inquiry from crossing borders to other fields, isolating each from every other as if it the concepts were drawn exclusively from the experience to which they give form. While terms cannot easily be translated in this way, and such translations will entail consequences of some kind, to deny that they can legitimately be undertaken at all is incoherent. To apply the same rule to sub-disciplines within fields of inquiry would mean that concepts arising in the analysis of poetry could not be used in critical approaches to other forms of literature, and that an entirely different conceptual apparatus would be required to write, for instance, about the nineteenth-century novel than about the twentieth-century novel. In situations such as these, one simply has to weigh with care the changes involved, and the effects that may follow from them; but they are not faults for which one must compensate, and to treat them as if they were would be to make assumptions about the origin and foundation of discourses that Foucault argues is ill-conceived. In adopting these terms from mathematics, Foucault is not trying to borrow authority from science to shore up his critique of history. Rather, their appearance here has a strategic sense that draws on developments in mathematics, its break with sensible intuition, its capacity to construct new objects, and the importance of its historical dimension. In view of this, it is not necessary that the precise mathematical sense of the terms be understood in detail. However, it is useful to recall that the terms entered into mathematics, or were given new significance, in the nineteenth century, as the discipline was transformed by the development of analysis and set theory and the reformulation of mathematics in terms of arithmetic rather than geometry. This involved a radical shift in the character of the elements of mathematical thought: where geometry was based on the line, and therefore on continuity, arithmetic was based on number, and therefore on discontinuity. For its part, set theory introduced a way of understanding the construction of the objects of mathematical thought that changed the relation of thought to intuition (see p. 17 above). Bachelard remarked that Cavaillès had hoped the way mathematics was giving a new significance to familiar and fundamental concepts, such as whole, infinity, limit, intuition, concept, object and construction, would come to be more widely appreciated, especially among philosophers. Foucault's strategic use of these terms to open up a critical distance towards familiar problems and ways of thinking would probably have pleased him.

Before engaging the theoretical problems that he has in his sights, Foucault undertakes some 'negative work'. This involves identifying a series of concepts commonly used in historical analysis that he then displaces by removing the principle of continuity on which they depend. I shall discuss each in turn, but will look more closely at the first two or three. The first concept linked to continuity is that of tradition, which allows events to be grouped together as belonging to the same order of succession, above all on the basis of a perceived similarity between them. This has, in Foucault's eyes, a twofold effect, in that it reduces 'the difference proper to every beginning', thereby bringing the origin closer, while at the same time encouraging an 'endless search for the origin' (AK 23, 31), since the pursuit of the limit within a continuous dimension will always allow another step to be taken – the extension of the line, or its further sub-division. If origins are for this reason made elusive, the homogeneity of tradition allows the 'new' to stand out. However, because tradition gathers events together to form a whole, what is new must appear as an interruption or break caused by something that comes from outside, such as a muse, madness, or the figure of genius. This sense that the rationality of a system precluded its capacity to generate something new or unpredictable had been a criticism directed at various philosophies, and in particular at Hegelian dialectic and the Husserlian conception of a nomological science.[1] Cavaillès made the question of how a deductive science like mathematics could be genuinely historical, in the sense that successive stages are unpredictable, a central problem in his work. His aim was to show that a rational system could generate genuine innovations without compromising its scientific character, and without attributing the unpredictability to epistemological weakness, and thereby to the finitude of the subject. The fact that Cavaillès dedicated the final part of 'On Logic and the Theory of Science' to a critique of Husserl's phenomenology, ending with a call for the philosophy of the subject to be exchanged for a philosophy of the concept, is in itself sufficient indication of the importance his work has for Foucault. But with reference to history specifically, Cavaillès' work showed how to break down a dichotomy between treating history as ordered by an underlying rule, which secures its rationality at the expense of its capacity to generate anything truly new, and treating it as a collection of empirical events, in relation to which any 'rational' explanation could only be a construction imposed on what in itself remained without order or sense. Foucault's concern is similar here, only it is about the history of ideas, thought, science and knowledge, rather than mathematics alone.

In writing of the relation between Foucault and Cavaillès (among

others), one has to confront the topic of Foucault's objection to the next in the series of concepts related to continuity, namely, 'influence'. The issue here is straightforward, however. Foucault declares that 'influence' should have no explanatory force, in so far as it relies on there being a causal link that passes from one text to another via the inner thoughts and intentions of an author, which are closed to inspection. Where connections are to be drawn, they should be between the works themselves and the ideas and patterns of thought that run through them; the connections need not pass through the subject as the ground of the true meaning of the work. Instead of influence, one can therefore talk of precedent, transformation and the establishment and modification of regularities.

Following on from this, Foucault turns to the concepts of development and evolution. The difficulty with the first of these, from Foucault's point of view, is clear, in that it invites one to consider a given history as the unfolding of a single idea, which thereby confers unity on the process (as though the idea were a substance undergoing change, but remaining essentially itself). Foucault is direct in his criticism of any attempt to describe the present condition of thought in terms of principles or structures whose force in the present depends on a future unity and coherence yet to be achieved. The Hegelian notion of spirit seems to be his primary target here, but any teleological approach will find itself in the firing line; that is, any approach that secures the coherence of the present by projecting unity into a future to which it is linked by a continuous history. Foucault describes this as an attempt 'to master time through a perpetually reversible relation between an origin and a term that are never given, but are always at work' (AK 24, 32). But giving up such an appeal does not mean that attention has to be confined to the present, and the simplicity of the present 'facts', as though an order of events, time and history were all constructions, or ideal inventions. It means that a different sense of history will be required, which is what Foucault's text explicitly sets out to explore; and in turn this means that a different sense of time will be required, which is an issue to which Foucault alludes without addressing it directly. A further indication of the need to do so emerges at the end of this paragraph, where Foucault writes that, having set aside the 'ready-made syntheses' with which we too readily interpret events, we should instead accept that 'they concern only a population of dispersed events' (AK 24, 32). There are two related issues to mention here. First, the reference to 'population' may well be a reference to 'population thinking' in evolutionary theory. Associated with Ernst Mayr, population thinking treats species as a population of unique individuals, rather

than as a class, and recognises that a species will be made up of many local populations.[2] This qualifies Foucault's earlier dismissal of 'evolution' in the same breath as 'development'. In addition, the reference to dispersed events is echoed later in this chapter by the suggestion that each moment of discourse be received in the 'temporal dispersion' in which it occurs (AK 28, 37).

The next unities that Foucault looks to suspend are those of the book and the oeuvre. A book cannot easily be defined by its material unity, and exists as a node in a network of references to other works. The network will vary according to the kind of text, making the definition of the book as a unity still more problematic. The oeuvre fares no better, on account of the many decisions that are required to establish its 'definitive' form, which leave translations, posthumous editions, abandoned sketches and notebooks in a grey area. Both of these examples illustrate the tendency to construct unities which can then become the protagonists of stories told about literature, philosophy or music, but also about science or any aspect of culture. Suspending them will allow Foucault to explore the complex relations that make them plausible but not necessary, and which are concealed by the unities laid over them. To borrow a visual metaphor, it is as if Foucault were adjusting the focus of the lens through which discourse is viewed to resolve blocks of colour into unexpected detail. Each moment of discourse is said to occur as a 'sudden irruption' and in a certain 'punctuality' (AK 28, 37). Bachelard's account of the instant and temporal discontinuity is relevant here, and in particular his description of the way a microscopic examination reveals many discrete events in even the smallest fragment. It is, then, always possible to draw back a veil of unity to find multiplicity beneath, and this applies as much to divisions and distinctions (e.g. between periods, discursive formations, and the various elements that Foucault will describe in the chapters to come) as it does to substantial unities such as a book, oeuvre or tradition.

This is a reminder, if any were needed, that Foucault's text is a response to Kant's account of the synthesis of the manifold of intuition in the Transcendental Analytic of the *Critique of Pure Reason*. For Foucault, it is possible, and indeed necessary from the point of view of archaeology, to see events *as* a multiplicity, in their 'pure dispersion', in order that the fundamentally contingent relations into which they have entered with other events, and in many cases by virtue of which they exist at all, can be described. Since, for Kant, to see anything at all consciousness must already have carried out the synthesis of the multiplicity characteristic of intuition, the idea of seeing events *as* a multiplicity

clearly requires some explanation. The fact that Foucault provides very little in the way of such an explanation in this text is one reason why it can appear so problematic, like an experiment that hasn't been fully thought through. However, the resources to make up for what is missing in this respect can be found in Bachelard, Cavaillès and Serres (as outlined in the Introduction to this book).

It is also the case that Foucault often tackles a question obliquely, and this is evident in the following passages, where he reiterates his rejection of discourse as a unity, this time on the basis that it is not the articulation of an origin that remains out of reach as a precursor to discourse. Such an origin might be 'already said', concealed precisely as the condition for what appears, and yet also 'never said', in the sense that it cannot be determinate in the way that the events within discourse are. Foucault is dealing rather quickly here with large themes in the history of philosophy, but if the idea of discourse as the articulation of an origin that cannot itself appear in discourse is a motif easily recognisable from classical metaphysics, its combination with the idea of the 'already said' being at the same time a 'never said' looks back to his account of the retreat and return of the origin in *The Order of Things*, and is also clearly a reference to Heidegger, to the ontological difference, and to thinking as a listening to what is 'not-said' (AK 28, 36). In the Introduction, I set out how Foucault's counter-reading to Heidegger's interpretation of Kant's anthropology leads him to propose a re-writing of Kant's critical philosophy, and of the analytic in particular, on the basis of temporal dispersion; so it is no surprise to see Foucault now insisting that discourse should not be treated as a cipher for an origin that confers unity while remaining itself out of reach. Instead, discourse should be received 'in that temporal dispersion that allows it to be repeated, known, transformed', or even erased and forgotten (AK 28, 37). The theme of repetition also ties this account back to Bachelard, for whom the instant was the condition for repetition, and thereby for the construction of what is experienced as continuity and duration (TI 85).

The closing pages of this first chapter deal with a series of closely related themes, some of which have already been aired. First, Foucault notes that the suspension of the unities of discourse is not intended to banish such forms for good, as if they were illegitimate illusions whose removal would clear a path to the truth. Foucault's interest is rather in how they came to be there, by what means they are sustained in existence, and with what effects. To expose discursive events and their relations in such a way as to make this possible requires allowing the whole field of the 'facts of discourse' to appear in 'its non-synthetic purity'

(AK 29, 38). That Foucault aims to open up the synthesis of experience to reveal its operation as a historical process has been noted already. What is new here is the addition of the idea of purity, a term that is used twice more in relation to archaeology before the end of the chapter. In the context of a discussion of synthesis and the conditions for the existence of events, it is impossible to read the terms 'pure' and 'purity' without thinking of Kant, for whom they denote a region of a priori description accessible to reason alone with no dependence on empirical experience; typically, intuitions of space and time, and the categories of the understanding, are designated 'pure'. From this perspective, the idea of a 'field of facts' appearing in its non-synthetic purity makes no sense, since no phenomenon can appear without having passed by way of synthesis, and to maintain otherwise would be to revert to a naively pre-critical position. However, this is not what Foucault intended, and the work of Bachelard, and in certain respects Cavaillès, offers an alternative interpretation.

For Bachelard, modern science is distinguished by the fact that it elaborates a world quite distinct from that of our everyday experience. It is not just that science has to break with common sense and the world that is familiar to us through our senses, and not even that the objects it describes are not directly given to sensibility; it is rather that the objects of scientific theory are not objects at all, in the familiar sense of substantial things that bear properties. Instead, they are intrinsically relational, and cannot appear to us except in and through their relations with other things. As such, physics describes a world that does not appear, populated with things that cannot appear, and which is the condition for the world as it is experienced. It is a form of experimental metaphysics. As Bachelard writes, the basic concepts of Newtonian science, such as absolute space, time and mass, could be regarded as the elements from which its theoretical constructions were built. They were 'notional atoms' (*atomes notionnels*) (PN 30–1). But the transition from Newtonian to Einsteinian physics revealed that the atom was itself complex: 'In short, the simple notion gave way to a complex notion' (PN 31). Something very similar takes place with Foucault's archaeology and the field of the facts of discourse appearing in its non-synthetic purity. This is to say, it is not that the facts appear in stark isolation, but rather that they appear with the relations that define and sustain their existence. It is the story of the formation and transformation of these relations that archaeological history tells. So when Foucault uses the terms 'purity' and 'pure' in these pages, he is doing so in a sense consistent with the idea of the historical a priori that he will go on to elaborate in this book, and not directly in reference to Kant.

With the suspension of the unities underpinned by continuity, Foucault writes that 'an entire field is set free', made up of all actually existing statements. This forms a finite, if vast, totality of events on which to draw in analysing how a particular unity emerged, and what became of it. The task of archaeology here is to undertake a '*pure description of discursive events* as the horizon for the search for unities that form within it' (AK 29–30, 38–9). What is perhaps most notable is that whereas earlier it was the field of discursive facts that was to be described in its purity, now it is the events themselves. As will become clear later, this conjunction simply means that the space is defined by the events that occur within it, and does not have any properties that serve as constraints or conditions upon the events or facts of discourse. In a note anticipating the move from archaeology to genealogy, Foucault adds that the description of discursive events tries to determine how one statement emerged rather than another. While this may appear similar to the practice of looking for the rule on the basis of which a given event was possible, the more orthodox form of inquiry tends towards the discovery of fixed rules and models, whereas the momentum of archaeology carries it beyond simply finding the rule on the basis of which an event occurred to look at the historical development of that rule. Archaeology searches for the finest difference between statements or discursive events to identify where a statement could not have appeared on the basis of existing rules for the formation of propositions or the production of meaning. Such a point indicates that a change in the formation of rules has taken place, and it is the history of these changes that is traced by archaeology.

The suspension of familiar forms of unity leads to a further possibility that is very important both for Foucault's archaeology and for the conception of critique he articulated many years later. Once the 'facts of discourse' are freed from groupings 'that purport to be natural, immediate, universal entities' (AK 32, 41), one can begin to describe links between the elements of discourse that had previously been invisible or obscured. These links may be relatively weak or strong, recurrent or occasional. What is important is that they can be explored, and that they contribute to a sense of discursive space as complex. As Foucault writes, the statement is isolated in order to bring forms of regularity into view that had previously been hidden. He lists four forms of relation that are fundamental to everything that follows, and to which he will refer repeatedly in the remainder of the text: 1) relations between statements; 2) relations between groups of statements; 3) relations between statements and groups of statements; and 4) relations between statements, and groups of statements, and events of a quite

different kind. This last set of relations explicitly includes relations between events that are straightforwardly discursive and events that are 'technical, economic, social, political' (AK 32, 41), which shows that Foucault's archaeological analysis of discourse already extended beyond linguistic forms to take in regularities in different dimensions of life.

Shortly before the end of the chapter, Foucault makes what seems to be a relatively unimportant clarification that on closer inspection reveals something significant about the whole purpose of the inquiry. In spite of the care he brings to the analyses, Foucault concedes that there is a risk that archaeology will be influenced by the forms of unity it means to suspend; namely, unities and syntheses that concern the speaking subject, the author, and other 'anthropological categories' (AK 33, 43). I have outlined in the Introduction Foucault's concern to avoid anthropology, the parallels with Heidegger, and ultimately the difference between their approaches, and so I can be brief here. In *Being and Time*, Dasein is chosen as a theme of study because it is that being through which Being is disclosed. Heidegger then suspends the categories of anthropology by laying out the ontological constitution of Dasein as Care, which is given a temporal interpretation. Rather than taking 'man' as his theme, Foucault takes the human sciences by which the figure of man has been defined and, as he writes, from which the anthropological categories are constituted. This may look like an epistemological analogue of Heidegger's ontology, but it may prove more accurate to describe it as an alternative ontology, one in which the formal conditions of existence are wholly historical.

2. DISCURSIVE FORMATIONS

The chapter begins with Foucault in a Cartesian frame of mind, noting that he has chosen to describe the relations between statements without recourse to the normally accepted forms of unity, thereby disrupting old habits and careless assumptions. Like Descartes' *Meditations*, then, this book can be read as a kind of experiment aiming at the possibility of a new way of thinking. Turning his attention to all forms of discontinuity, break, threshold or limit, Foucault says that the analysis will open up the field of discourse in which statements occur to describe 'the relations of which they are capable' (AK 34, 44). Leaving a consideration of the specific terms in which the account is presented until later, in this chapter Foucault sets out to examine the relations found within the groupings that make up accepted forms of unity.

The bulk of the chapter is taken up with the discussion of four

hypotheses, each of which identifies a mechanism by which a recognised discursive form achieves unity, problematises that mechanism, and then proposes an alternative in its place. As Foucault sets out what he is going to do, the question of the legitimacy or validity of the descriptions he will propose is raised twice. It is not clear what to make of this, given that later in the book he pointedly denies that archaeology concerns itself with the legitimacy of the discourses it analyses.[3] Although it could simply be that Foucault wishes to make his account of archaeology plausible, his comments here may also reflect a concern to balance the disruptive force of archaeology with criteria that provide a structure on which thought can continue to rely. Archaeology is not a call to radical scepticism, and is not intended to initiate a form of hyperbolic critique.

The first hypothesis is that statements form a group in so far as they refer to the same object. Foucault's example is that statements belonging to psychopathology all appear to refer to madness (AK 35, 45). However, he notes that it would be impossible to draw from an examination of 'madness itself' the means to identify a group of statements defined by regular and consistent relations. Madness cannot be identified independently of the statements that name it, and no single object emerges from the analysis of different groups of statements (for example, those of medical discourse and legal discourse), or different sub-groups within the overall group named 'psychopathology'. In effect, one is led in circles without ever reaching a clear and well-defined answer. This is a variation on the theme, familiar from the philosophy of science, that theoretical terms receive their meaning from the theories in which they appear and therefore cannot easily be translated between theories: for example, 'mass' in Newtonian physics is different to 'mass' in Einsteinian physics, since in the former it is constant whereas in the latter it can be converted into energy and is therefore variable. Examples of this kind have been taken by some to lead to the incommensurability of theories; that is, to a situation in which each theory is isolated from others by the impossibility of translating between them, making it difficult or even impossible to evaluate one against another. In spite of the fact that Foucault clearly takes a strong line on the 'theory dependence' of objects such as 'madness', he never arrives at this extreme position. For incommensurability arises when a term defined within one context cannot be translated into another, in which case the two terms are in effect homonyms and there is nothing further to say. But the emphasis in archaeology on breaking down sharp distinctions in discourse means that there will generally be intermediary steps to describe; and where this is not possible, other relations between discursive regions may be

consistent. What is important is that the focus of attention shifts from the constitution of a stable object to the broad discursive space in which 'objects emerge and are continuously transformed' (AK 36, 46), and from there to the rules that allow the appearance of specific objects at specific times and places. Crucially, however, there is a further shift of attention from the appearance of objects to their transformation. It is the rules that define these transformations, and therefore the 'non-identity through time' of the objects in question, that bring the definition of a group of statements within reach.

If it is possible to determine the unity of a given discourse, it will be through the transformations that it undergoes, through the change that breaks it open and disrupts it. One therefore comes full circle to find that in order to understand the unities to which history refers one must have recourse to history itself, albeit now in a different sense. As Foucault writes, to define a group of statements will be to define the 'interstices' between the objects to which they refer, and 'to formulate the law of their division' (AK 36, 47). There is something odd about this, in so far as a law or rule might generally be thought to bind things together, or to establish a division only by first creating unities which the law demarcates. However, a law will be understood in this book as a regularity, and regularity involves the construction of a series of instances that exist as a group by virtue of their difference from one another (for example, a series of points, or a series of numbers). The rules or laws governing the appearance of an object and the transformations it undergoes are identifiable, and it is with these transformations that archaeology occupies itself. As such, its 'objects' will be these rules at least as much as the things to whose transformations they give form. Their status will be one of the central themes of *The Archaeology of Knowledge*, since they can be neither transcendental nor simply empirical in the sense that they are given along with the objects whose transformations they govern. It is in part because this level of determination has been ignored that, in the previous chapter, Foucault wrote that his analysis will bring into view links between the elements of a group that had previously been invisible.

The second hypothesis Foucault explores in this chapter is that statements can be grouped together according to 'their form and type of connexion' (AK 36, 47). Is there not, he suggests, a certain way of approaching the 'division of the perceptual field' or of 'transcribing what one perceived in what one said' (AK 36–7, 47) that is shared by statements belonging to a particular field?[4] Foucault reports that he had to abandon this idea when he realised that what was supposed to be a principle of unification, when reapplied at different levels, invited

the identification of further unities that led to an increasing division of the field as a whole rather than the reverse; for example, observation in medicine could be divided into visual inspection, auscultation, palpitation, and the use of microscopes and biological tests – to which we would now add MRI scans and many other techniques. Foucault lists other cases of a similar kind, leading to the conclusion that 'If one wished to define this discourse by a codified and normative system of statement, one would have to recognize that this medicine disintegrated as soon as it appeared' (AK 37, 48). The problem, as before, arises when one assumes either that a given field will be defined by a law or rule that embraces its development entirely, or that there is a law or rule that can in some sense act as the thread linking its variations and successive stages. Instead, Foucault draws attention back once again to the heterogeneity of statements, and thereby to the relations between the various rules of their formation. Elaborating on the idea that unity is found in 'a law of division', Foucault now writes that it will be found in the relation of these rules to each other, which means that it will depend on patterns found in the transformation of one rule into another.

A similar point follows, as Foucault considers the possibility that statements could be grouped according to key concepts. Again, the hypothesis founders as Foucault sees too many degrees of change arising to allow the anchor points to hold convincingly. Instead, he speculates that discursive unities might be found in the difference, and even incompatibility, between concepts (AK 38, 49). Rather than seeking to build up a structure of general concepts to embrace all others, the point would be 'to analyse the interplay of their appearances and dispersion' (AK 38–9, 49). Here, one can perhaps identify a different target for Foucault's criticism, albeit again unnamed. The idea of an architecture of abstract terms framing a set of concepts related to one another deductively recalls the idea of a formal system such as Husserl's notion of a nomological science, in which a formal ontology that determines all possible objects is coupled with a formal apophantics that determines all possible forms of judgement about those objects to provide the basis for a nomological science.[5] Two related features of such a system leap out as having already been targeted by Foucault. First, that it aims to capture rules that govern not only the emergence of concepts and objects that actually exist, but also all those that are possible. As such, it constructs a unity within which history unfolds, rather than discerning unity in historical development itself. Second, it thereby undermines the capacity of the historical process to generate anything that had not been anticipated. Both points convinced Cavaillès that phenomenology could not provide an adequate theory of science, and

that a philosophy of the subject should give way to a philosophy of the concept (OC 560).

The final hypothesis Foucault proposes is that statements may be grouped together by theme. This seems to make possible a different kind of grouping, looser and more amenable to the migration of concepts across disciplinary boundaries. For example, the theme of 'evolution' extends beyond biology to philosophy and cosmology. Such themes might be less explicit in their guidance of research but be all the more effective for that. However, Foucault raises an objection similar to those already noted, in so far as a theme that appears to group two more approaches together may, viewed differently, reveal significant divisions; for example, evolution was understood at one time in terms of the continuous kinship of species, but at another in terms of discontinuous groups. Such discourses are different in ways that an appeal to a similarity in theme simply masks, leading Foucault to suggest that the principles by which discourses are individualised might be sought in the way they relate to other themes and, going beyond themes alone, other discursive strategies and interests (AK 40, 51).

To sum up, Foucault finds an inconsistency in attempts to define groups of statements in terms of shared objects, shared concepts, fundamental formal principles, or persistent themes. In each case, he finds himself led back from unity to multiplicity, from things to their relations, and from a defined form or relation to a variety of relations. Contrasting his approach to that of historians of science and philosophy (who address chains of inference), and to that of linguists (who address tables of difference), he proposes to describe '*systems of dispersion*' (AK 41, 53). Although Foucault has already introduced this idea, it is by no means clear and he doesn't offer much more in the way of explanation here. However, he does add that wherever 'objects, types of statement, concepts or thematic choices' exhibit a regularity (for example, in their order, correlation, position, function or transformation), one can identify a '*discursive formation*' (AK 41, 53). Any such discursive formation will in turn be subject to '*rules of formation*' that condition the actual existence of its elements. As noted already, the restriction of these conditions to the actual existence of elements within a given discursive formation, rather than all possible elements (or all their possible relations to one another), means that transformation is placed at the heart of the account. History is the condition *par excellence* by virtue of which discursive formations can arise, but no master discourse of history is proposed that will govern the elements Foucault has enumerated, or the possible forms of their relation to one another.

The work of Cavaillès is again worth recalling here, in so far as he

proposed not only that the history of science be the condition of its being science at all, but also that there is no single rule giving form to that history. Serres takes this idea further in developing a conception of history on the basis not of linear geometry but of topology, and of discontinuous topologies. Foucault appears broadly to accept these points, while translating them from mathematics to the human sciences.

In the closing paragraph of the chapter, Foucault entertains the possibility that the 'familiar' groupings with which he began may disappear as his account proceeds, or that the account will fail to provide a criterion on the basis of which to judge the scientific character or otherwise of the discursive formations addressed. One is tempted to add that the whole debate on whether the human sciences are 'proper' sciences may be revealed as misplaced because it does not examine its own concepts and objects carefully enough to see the dispersion within them. Looking ahead in Foucault's work, what becomes crucial are the effects produced by the relation between knowledge and institutional forms (an issue to which Foucault has already alluded in the reference to non-discursive events at the end of Chapter 1), and as there are other forces at play this depends only in part on a candidate passing a test for scientific status set by some meta-level discourse. Significantly, he speculates that his analysis may be situated at a different level, 'constituting a description that is irreducible to epistemology or the history of the sciences' (AK 42, 54).[6] The alternative presented is one between a normative epistemology of what science should be (what true science is) and an 'empirical' history of what has been called science; or between the 'internal' history of the development of science (a refinement of logic, methodology, etc.) and the 'external' history (the sociology of science). Serres describes how this distinction breaks down in modern mathematics (HI 70–1), and this is important for Foucault's conception of archaeology here. If archaeology is indeed irreducible to these alternatives, it breaks open what have hitherto been the only recognised approaches to the understanding of science, raising the prospect of a third alternative: namely, a discourse concerned with the claim to scientific character that focuses on the historical transformation of its various elements to such an extent that historical change fractures into multiple levels of becoming and the integrity of the discourse itself is put in question, its borders with other disciplines and sub-disciplines losing their definition. Indeed, when Foucault goes on to identify a danger that instead of the present experiment confirming a familiar picture, it may force one to advance 'towards an as yet uncharted land and unforeseeable conclusion', there is a temptation to suppose that this is not a danger he is inclined to avoid (AK 42, 54). But when he adds that the historian,

losing all familiar points of reference, may be left with nothing more than 'a blank, indifferent space, lacking in both interiority and promise' (AK 43, 54), it seems clear that this is an outcome he already knows will not materialise, which is presented now more for dramatic effect than anything else. For however disorienting and unfamiliar the space may turn out to be, it will be full – of unexpected relations, fleeting objects, different subject positions, and concepts drawn more finely than before. And yet, the 'experimental' aspect of all this needs to be balanced against what remain more orthodox concerns. The 'critical' impulse to determine the 'proper' bounds of a given discourse has been preserved, but displaced. The rules that determine these bounds now spring from the field in which they apply. As regularities drawn from the elements themselves, they describe the conditions of the actual emergence of this or that form, without setting conditions for all possible forms, and they themselves will change along with the complex relations they describe. Without reading back retrospectively from later texts of Foucault, and in contrast to the earlier reference to conditions of legitimacy, one can already see here that the determination of limits is intended not to define what is possible, but to frame precisely the conditions of what has occurred, placing those conditions in relation to other rules and exposing them to the possibility of variation.

3. FORMATION OF OBJECTS

In *The Order of Things*, whose original title was *Les mots et les choses*, Foucault described how thought in modernity had sought a way to stabilise the fluctuation between the empirical and transcendental levels of analysis that had characterised post-Kantian thought and held it in an impasse. If the conception of discourse that Foucault develops in these chapters can be read broadly as an attempt to release thinking from this position, the present chapter in particular aims to open up a gap between words and things in which objects are formed and their relations established, thereby driving a wedge between a simple positivism (or realism) and a world of ideal meanings conveyed by language, between words and things (*les mots et les choses*). The next chapter will carry out a similar move with respect to the empirical and the transcendental subject.

The chapter is full of terminological invention and layers of distinctions, and for this reason requires some patience to unpack. It takes as its focus the first of the hypotheses raised in the previous chapter; namely that the unity of a discourse may be derived from the various versions of that discourse that refer to the same object. The analysis of

this possibility calls for an account of the formation of such an object that takes into account Foucault's problematisation of its unity, which involved shifting attention from the object to the rules of its formation, and then to the rules of its transformation. The example Foucault selects to illustrate his proposal is the discourse of psychopathology from the nineteenth century, which he chooses in part because its objects were new, and underwent rapid change (for example, hallucinations, speech disorders, sexual aberrations, and so on). Many related objects appeared, were transformed, and in some cases disappeared, in rapid succession, and Foucault asks if it is possible to determine the rule to which at least their appearance was subject (AK 45, 56). If it is possible, it will not be by generalising inductively from empirical experience, and there are several reasons for this. First, because there is no series of similar cases from which to generalise. Second, any appeal to a history of psychopathology would have to assume the existence of objects of psychopathology, and therefore the existence of the discipline itself, but the conditions of both the objects and the discourse are in question for archaeology. Finally, any rule derived in this way would set the conditions for the possible appearance of other objects 'like' the one under investigation. For the same reason neither will it be a kind of axiomatic basis that governs each and every possible appearance. The rule is to be the rule of the actual appearance of a group of objects that are related, though also characterised by their dispersion. It will therefore be a local rule, yet one with sufficient generality to define the appearance of a group of objects within that locality. Precisely how this works will become clearer as the text progresses, and will be addressed directly in Chapter 5 of Part III, introduces the idea of the historical a priori.

Given that the rule of the formation of objects is not equivalent to a restricted generalisation on the basis of an empirical history of psychopathology, Foucault is not asking about what led to the introduction of a particular object, and whether the same conditions were reproduced elsewhere, so that their explanatory force could be extended beyond the single case. Such a perspective operates on two levels: empirical conditions account for when and where a particular object will appear (and what will happen to it), given the bounds set in advance by transcendental conditions for the existence of all objects of experience. What interests Foucault is the setting of these bounds. His question is: how is it that a new kind of object could appear? It demands at once a break with existing ontological conditions, and the establishment of sufficient consistency for the new kind of object to be repeated across a series of variations. The idea of the emergence of a new kind of object, rather than simply a new variety of an existing kind, raises ontological

questions that go to the heart of the divisions between what Foucault identified as the two schools of phenomenology in France: the group of thinkers that followed Husserl and Heidegger, and those such as Bachelard, Cavaillès, Koyré and Canguilhem who broke with the philosophy of the subject and struck out on a different path, based around the concept. The relations between the two groups of thinkers cannot be summed up easily, but a desire to secure the possibility of radical innovation is a recurrent feature in the work of Bachelard, Cavaillès, and others in that group. In the context of mathematics alone, Cavaillès regarded the development of science as driven by the thematisation of existing objects and concepts, in such a way that its movement, though deductive, went beyond the elaboration of existing possibilities. It was precisely over the capacity, or otherwise, of formal thought to break with its past and allow the emergence of something new that Cavaillès took issue with Husserl in his essay 'On Logic and the Theory of Science'. Foucault's account of the novelty and specificity of discursive objects clearly draws on work in Bachelard, Cavaillès, and the strand of phenomenological thought he identifies as indebted to mathematics and the philosophy of science.

The account Foucault sets out in this chapter is based on three elements, which he introduces in turn: surfaces of emergence, authorities of delimitation, and grids of specification. His first step is to identify where the objects of discourse appear such that they can then be designated and analysed; that is, to 'map the first *surfaces* of their *emergence*' (AK 45, 56). To map a surface is to gather information on a terrain, to trace its contours and to identify what lies on its surface. At first, this seems quite straightforward. Surfaces of emergence might include the family, social groups and religious communities, but also art, sexuality and penality. They will not be the same for each society, since the objects of psychopathology may form and manifest themselves in different ways. Yet Foucault also describes these surfaces as 'fields of differentiation', in which distances, discontinuities and thresholds appear. This is a reminder that the space to which he refers here is multiple (the plural 'surfaces' is used), and as such it is a non-totalisable locality that cannot be situated within a more general uniform space as if it were a modified version of what is found around it. Bearing this in mind, it would be more accurate to say that to map a surface is not only to trace its contours and identify the objects on it, but also to determine its metric; that is, to establish the scale of proximity and distance between its points, to determine what form a 'straight line' will take and, ultimately, to arrive at a (mathematical) function describing its form. In this context, a surface such as 'the family' will not only manifest differ-

ent psychopathological objects to a surface such as 'art', but the relation between two objects as they appear on the surface of the family and two nominally equivalent objects as they appear on the surface of art will not necessarily be the same, since the surfaces themselves may be (metrically) different. Comparing or relating two objects appearing on different surfaces may be more problematic still. In short, the relations supported by the surfaces of emergence are local, with this locality giving rise to a complex space when viewed across a larger scale.

Of course, simply appearing does not mean that an object receives attention and begins to produce significant effects. For this to happen, it must be taken seriously enough as an object for mechanisms to deal with it to be put in place, which occurs when 'authorities of delimitation' identify and name an object, establishing its existence as an object of study. In the context of nineteenth-century psychopathology, medicine is the most prominent authority of delimitation, but other examples include religious authority and literary criticism. The qualification for any authority to do so is simply that it can, and that its doing so is accepted and taken up by others.

The last of the three elements on which the account of the formation of objects is based is that of grids of specification, which are the systems by which 'different "kinds of madness" are divided, contrasted, related, regrouped, classified, derived from one another as objects of psychiatric discourse' (AK 46, 58).

Foucault loses no time in pointing out that the account provided so far in this chapter is flawed; first, because the three elements identified do not by themselves provide objects 'fully formed and armed'; and second, because it has not yet taken into consideration the relation between the three elements. The two flaws turn out to be linked, as Foucault concludes provisionally that the formation of discursive objects is made possible 'by a group of relations established between authorities of emergence, delimitation, and specification' (AK 49, 60) (which is an almost precise fit with the three elements outlined earlier in the chapter). However, his analysis is not directed towards conditions of possibility, and so there remains more to be said. Drawing on ideas outlined in the previous chapter, Foucault proposes that a discursive foundation can be said to have been defined if one can specify an actual group of relations between emergence, delimitation and specification, show that the rules of the emergence of a particular discursive object are found there, and in addition show how the group of relations exceeds specificity sufficiently to give rise to objects of different kinds. This sounds like quite a tall order, but it comes down to being able to define a set of conditions for the existence of an object that, while

not general (for all the reasons already described), extend beyond the singular object in enough ways to allow other related but not formally identical objects to exist in relation to the first, thereby providing the objects required to populate a theory. Once again, there is a balance to be struck between specificity and a degree of generality from which the account can draw explanatory force. Finding that balance will open up a route between the historical reconstruction of a discourse and an appeal to the formal or transcendental conditions that underlie it, and this will depend on showing that discourses are governed by rules understood as regularities.

Given the complexity of the conditions required for the appearance of a discursive object, the constraints on what it is possible to speak of at any given time are quite tight: it is not even in principle possible to speak of anything whatsoever at any time. For it to be possible to speak of a thing, it must first emerge, and this means that the group of relations between its surface of emergence, its delimitation and its grid of specification must have achieved at least a threshold degree of clarity. Before this is the case, the thing will be vague and ill-defined, its separation from other things incomplete, and the terms in which it can be addressed uncertain and perhaps underdetermined. This is why not everything can be seen and understood at any time just given the right effort and conditions, and not, as Foucault explains, because there is 'some obstacle whose power appears . . . to blind, to hinder, to prevent discovery' (AK 49, 61). The reference here may be to the familiar idea that science discovers what has been true all along, where what is real has simply been concealed by prejudice, ideology, the absence of correct instruments, or some manifestation of ignorance. But Foucault may also be referring specifically to Bachelard and his idea of an epistemological obstacle, the grain of intellectual habit derived from everyday language and culture against which the scientific mind has to struggle to achieve a fresh conception of phenomena. Foucault did not accept this aspect of Bachelard's account of science (see p. 12 above and pp. 147–8 below), but he was more amenable to the idea that objects appear as the outcome of a process of construction. The object, he writes, 'does not pre-exist itself, held back by some obstacle at the first edges of light. It exists under the positive conditions of a complex group of relations' (AK 49, 61). There are several points worth underlining with respect to this idea. First, as we have noted before, the conditions in question here are conditions of the actual existence of an object, and not conditions of possibility. Second, in so far as the existence of the object is conditioned by a group of relations, it appears that the object could be described as 'constructed'. This is not mistaken, but it may be misleading, to the

extent that it implies that the object is in some respect not fully real, perhaps that it is unnecessary, and that it can be made to disappear by some discursive sleight of hand. In its more extreme forms, this view conceals a belief in the existence of a real world beneath the fabric of our theorising, and denounces those occasions when what we say about the world has departed too far from the way the world really is, and the effects of the world as spoken present themselves in an unwelcome manner. In a more sympathetic form, the view locates the conditions of the existence of an object in relations that occur at a discursive level, while acknowledging that as a 'social construct' the object has real effects. In both cases, Foucault's determination to drive a wedge between words and things, and to bring to light a complex dimension of relations, clearly moves beyond the reach of such criticism.

However, to understand what Foucault is proposing here it is helpful to go back to Cavaillès again, and to his account of the relation between mathematics and physics. First of all, for Cavaillès, the objects of mathematics were neither 'found' nor 'invented', but constructed via operations performed on the concepts and objects of earlier stages of mathematics. The conditions are therefore at once specific (conditions of the actual existence of a given object), local and historical, just as the conditions described by Foucault must be. And as formal, they are also independent of both transcendental conditions and empirical experience. In all these respects they are precursors to the conditions sought by Foucault. Moreover, Cavaillès follows Bachelard in describing the relation of mathematics to physics not as one of application, which would leave open the idea of a physical reality over which a theoretical grid has been thrown in the hope that it will fit, but as the 'incorporation of the world in the scientific universe' (OC 38) such that there is no separation between them. As noted a little earlier, the discursive object is both constructed and real in the highest degree.

There are two final observations to be made in relation to this point. First, that the relations characterising the discursive formation are complex. Since the text was written before complexity theory was established, it would be wrong to read too much into this. However, Foucault would have been familiar with the work of Serres, who had been writing about the mathematical conditions of non-linear dynamics since the early 1960s. With three elements (surfaces of emergence, authorities of delimitation and grids of specification), each involving relations or groups of relations that enter into relations with each other, and with any new discursive object formed likely to have an effect on the groups of relations that conditioned its emergence, an examination in terms of complexity as it is understood today would not be out of

place. The second observation is that as a set of conditions the three elements are 'positive', suggesting that they are open to clear and direct examination – if one knows how to look. This is a corollary of the fact that the relations are not internal to the object, defining its 'internal constitution', but are rather the conditions of its existence alongside other objects, in relation to them. One is reminded again here of Bachelard's remarks on the 'microphysics of the noumenal', in which he notes that the objects of physics are neither things familiar from empirical experience, nor substances to which an independent existence is attributed, but rather things that exist only in relation to other things (NM 76). The conditions of their emergence locate them in a group of relations to other things, each of which in turn exists only in relation to the phenomena with which they are placed. This is what Foucault calls being placed 'in a field of exteriority' (AK 50, 62), and it is essential to his conception of discourse.

Having considered discursive relations, Foucault now introduces two further sets of relations, which run parallel to the opposition between words and things: primary relations are those that actually exist between institutional and social forms, 'independently of all discourse' (AK 50, 62), and secondary relations are what can be said about the primary relations from within existing discourses. Foucault's innovation is in the elaboration of discursive relations, but he acknowledges that it is important to specify their 'interplay' with primary and secondary relations.

When Foucault writes that discursive relations are neither internal to discourse in the sense that they connect concepts or words, nor exterior to discourse in the sense that they might limit it in some way, he is negotiating the tendency to make the division between words and things fundamental and exhaustive. Discourse falls between the two, as what might be called, by analogy with Kant, a synthetic practice that produces objects for study. The unity of a given discourse lies in the rules immanent to this practice – and much will hang on the nature of these rules. One consequence of this is that, as Foucault suspected, the unity that emerges from this analysis is not congruent with the discipline initially taken as an example; that is, if the origins of psychopathology were traced, and light shed on the forms of analysis to which it can be applied, one would find that the unity determined on the basis of the discursive formation 'did not appear to have the same dates, or the same surface, or the same articulations' as psychopathology, which appears rather to be the name for a collection of secondary relations, simply what practitioners at a given time can say about primary relations of a particular kind (AK 51, 64).

The remainder of the chapter is mostly concerned to reinforce the barriers blocking any retreat to a concern with things or language. Discourse, Foucault writes, does not provide a history of the referent; that is, the point is not to determine whether an identification of an individual or group of individuals as 'mad' at a given time was correct, or a misrecognition of other conditions or forms of experience. But in refusing this option, discourse is not driven back to an analysis of meaning, to an attempt to determine the difference between 'psychosis' and 'neurosis' in a given context. Again, the field of inquiry is not exhausted by this alternative. Discourse is not 'a mere intersection of things and words' (AK 53, 66). It is what is revealed when the grip of words and things on one another is loosened. It forms the things of which it speaks, and does so according to regularities that are historical without being binding. They leave the future to be written, as the relations constituting a discourse settle into a pattern, and this pattern interacts with others around it.

4. THE FORMATION OF ENUNCIATIVE MODALITIES

Countering the view that his work sought to do away with the subject, Foucault stated that he had from the beginning been interested in the relation between the subject and truth, and the modes of subjectification that this relation promotes. Even a cursory survey reveals that he was concerned with the subject across the entire span of his research, but did not believe that a philosophy of the subject, in the style of phenomenology, was adequate to reveal the actual conditions of its existence. Dispensing with the figure of 'man' as he proposes in *The Order of Things*, does not mean that one must cease taking an interest in the way individuals become subjects, and in the form and texture of the experience 'given' to a subject. Having described in the last chapter how the dimension of discourse opens up between words and things, in this chapter Foucault will carry out a similar operation with the subject, showing that discourse occupies a space between transcendental and empirical forms of subjectivity (AK 61, 74).

The chapter begins with a list of different kinds of statement related to medical discourse. Foucault's question is 'What necessity binds them together?' (AK 55, 68). His use of the term 'necessity' here implies a logic or structure of a kind usually sought either in reason itself or in the inevitability of a chain of events. The first alternative is not a genuine candidate here, as no one could claim that medical discourse was necessary in an absolute sense. This leaves the option that it is necessary in

the sense that the descriptions, biographical accounts, locations, experimental verifications and so on to which Foucault refers were all caught up in a series of events that made them somehow inevitable. Yet this, too, is out of the question: archaeology does not trace relations of cause and effect between empirical events. Foucault refuses each of these alternatives in order to avoid referring back to either transcendental or empirical conditions. Instead, the necessity pertains to the relation of the statements to one another, not to the occurrence of any particular statement or any particular kind of statement. In some sense, they form a structure in which each plays a part, and if a statement is to belong to the discourse of medicine, then it must find a place within this structure. As such, the necessity does not place a limit on the object of statements, or the form that those statements must take, but only on the position they occupy in relation to other statements. It is the law governing this positioning that Foucault aims to bring to light in this chapter.

The determination proceeds via three questions. Who is speaking? From what institutional site is the discourse pronounced? What is the subject's position in relation to the objects of the discourse?

The first question – Who is speaking? – comes down to the issue of status and rights. Staying with the example of medicine, Foucault notes that 'Medical statements cannot come from anybody' (AK 56, 69), and that their authority cannot be dissociated from the person who makes them. It is, therefore, the doctor's position in a network of institutional and social relations, including legal conditions and criteria of knowledge and competence, that makes the difference between a casual observation and a diagnosis. This, of course, will vary from place to place and from time to time, though with a degree of internal consistency that means doctors in a variety of cultural and historical settings will have a great deal in common, even if their methods and theoretical background are quite different.

The second question concerns the institutional site from which the discourse emanates. In simple terms, there is a difference between a report written by a doctor on a notepad, and a report written by the same doctor on headed paper with the hospital stamp and issued through official channels. Moreover, the authority of medical discourse is associated with different institutional sites (hospitals, private practices, laboratories, and so on), each with a different role or profile and relation to medical discourse as a whole. The role and profile of a site in relation to medical discourse can change over time, as different institutions and forms of practice gain or lose prominence, appear or disappear.

Finally, the subject is defined also by its situation in relation to certain

domains or objects of discourse. It may be a 'questioning subject', a 'listening subject', a 'seeing subject' and so on. The subject may use instruments, or not, may take up one perspective or another in relation to the object. In addition, it may have different roles in the exchange of information about the object, preparing or receiving a variety of documents, and disseminating information and knowledge in a variety of ways to a variety of other parties. Again, the boundaries defining what is accepted as medical practice in this respect change over time as new methods or instruments are introduced, new systems of classification are adopted, and new kinds of relation to other theoretical domains or institutions are established (AK 58, 71–2).

In pursuit of a law that gives unity to the variety of statements recognised as belonging to medical discourse, Foucault has identified three ways in which the subject is positioned with respect to that discourse, each of which comprises a further range of different positions. Any particular statement may be characterised by one or more of these, and all of them are subject to change. As we find repeatedly in Foucault's analyses, each successive layer reveals at least an equal measure of complexity, and sometimes more. It may seem that he is a long way from discovering 'the law' that gives unity and thereby necessity to the body of statements belonging to medical discourse (and there is no guarantee that an examination of legal discourse or scientific discourse will yield the same criteria and parameters). However, to say that his account is losing sight of the intended destination reflects a misplaced expectation.

Foucault notes that he has not tried to reduce the 'disparity' revealed by uncovering an underlying formal structure of any kind. He did not aim, he writes, to reveal an organising principle that gives statements like those of medicine 'their element of intrinsic necessity' (AK 59, 73). Which is to say that their necessity does not come from within, or from their adherence to a prescribed form, but from their relations to other statements, groups of statements and non-discursive events. To the extent that there is an appeal to form, it is directed at the form of the discourse as a whole, and not at the form of judgements or statements that make it up. Although a discourse that has crossed the threshold to become a science may well require all propositions belonging to it to conform to certain conditions, these conditions themselves are not what makes the discipline a science. In this sense there is no equivalent here to the idea of a formal apophantics as it occurs in Husserlian phenomenology, in which a science is defined by its unity, and that unity by the formal structure that judgements must take if they are to qualify as scientific. Foucault's move towards the law determining the necessity associated with the discourse is not a move towards simplicity,

and the 'system' of relations that defines the discourse 'is not "really" given or constituted *a priori*' (AK 59, 73). If Foucault is prevaricating here, it is because he is waiting until later before addressing this issue directly (cf. AK Part III, Chapter 5). Nonetheless, there are three points worth making now. First, that the defining features of the system are not 'really' given a priori indicates what is at this stage still a rather vague proposal; namely that, like discourse itself, they occupy a position between the transcendental and the empirical. This will have to be made more precise as the reading continues. Second, the fact that Foucault steers his analysis away from any expectation that discourse be placed on a formal basis does not mean that formalism is irrelevant to what he is doing. As noted already, the model here is mathematics, which for Cavaillès was a formal discourse distinguished not only from empiricism, but above all from any transcendental or axiomatic base. Its necessity derived from its unity, and its unity from its autonomous historical development. Foucault's analysis of medical discourse shares this sense of separation, unity and historical change. Finally, what kind of unity is this? What kind of 'law' has Foucault revealed? It is not, and cannot be, a law that governs the medical discourse and its development from outside, or even as a formal basis within it that remains fixed as the discourse itself changes. If the unity of the discourse comes from its historical development, then the law will be the law of this development. As such, it must give consistency, but also allow for significant variation in the boundaries of medical discourse and the rules governing the practice at any time. The consistency, therefore, will permeate not just the production of statements (who can speak, from what site, and from what position in relation to the object of discourse), but also the way the system changes. It will be synchronic and diachronic. The term for such a consistency is 'regularity'. One can therefore say that medical discourse is characterised by a regularity in the production of statements, and in the way that the system, as a practice, changes over time. In one way or another, the same can be said of other discourses, and the idea of regularity comes to play a central role in the account of archaeology.

5. THE FORMATION OF CONCEPTS

A series of questions similar to those already presented in relation to the objects and subjects of discourse will now be posed in relation to concepts. At first glance, the theme of this chapter seems to sit alongside those of the previous two chapters. However, problems that have emerged regarding the conditions of systematicity and the way in which

unity is sustained across historical change are carried over and begin to be addressed.

The chapter opens with Foucault reflecting that while it may be possible to discern the 'deductive architecture' of a discourse that is quite narrowly specified, extending it in breadth to the scale of economics, grammar or biology introduces a complexity bordering on disorder and the task becomes impossible. The concepts no longer appear to conform to a well-defined set of conditions, and it becomes hard to see anything that defines the unity of the science in question. Rather than concede that the task is impossible, however, Foucault raises the prospect that the requirement for order might be met in different ways: by a succession of conceptual systems linked by a continuity in the problems they address; by a law that might account for the 'emergence of disparate concepts'; by a system that was not strictly logical. Summing up these various possibilities, he concludes that 'one would have to describe the organization of the field of statements where they appeared and circulated' (AK 62, 75). Two themes that have already emerged come to the fore again here; first, that the rule giving a discourse unity lies in the discourse itself, in its thematic and historical variations; and second, that it is possible to describe this, without the description itself inviting a further set of considerations relating to the unity of the discourse deployed (and constituted) in the description. In this way, Foucault engages in a kind of positivism at the level of the rules organising a discourse, rather than at the level of the contents of the discourse.

The description of the field of statements is divided into three parts, which deal in turn with orderings of enunciative series, forms of coexistence – themselves divided into fields of presence, concomitance and memory – and procedures of intervention.

The first concerns forms of succession and dependence, and the 'rhetorical *schemata*' according to which groups of statements are combined in a single discourse. In turn, these include inferences, implications, appropriate orders of description, the use of rhetorical or stylistic patterns, and the distribution of events in the succession of statements. Not for the first or last time, one finds that the closer the attention given, the more detail is revealed, and the more remote any possible claim to have discovered a unifying principle among the distribution of statements becomes. However, this is not a problem for Foucault, as long as the idea of 'dispersion' can be put to use as a form of organisation. Foucault's example here makes the point. Natural history in the seventeenth century did not use the same concepts as natural history in the sixteenth century, but what was decisive was the way statements were arranged regardless of the specific concepts used. The illustrative

list that follows presents discourse as the construction of the relation between what can be seen and what can be said, between things and words. Above all, Foucault concludes, discourse was a 'set of rules for arranging statements in a series' (AK 63, 76–7).

Next, Foucault describes three forms in which concepts coexist. The first, called a 'field of presence', includes those statements that are taken up from elsewhere and become part of the discourse in question, having been accepted subject to a wide variety of procedures of verification, presupposition and justification (and more besides). Then comes a 'field of concomitance', which is made up statements from other discourses that are used analogically, as models or in some legitimising function (Foucault's example is that of natural history in the period of Linnaeus, which was defined in relation to cosmology, philosophy, theology, mathematics and other sciences). And last in line is what Foucault calls a 'field of memory', which includes statements that are no longer part of a field of presence, but to which significant relations continue to exist.

The last of the three ways that statements are ordered is according to procedures of intervention that are applied to statements, such as techniques of transcription, translation, approximation and the means by which the validity of a statement is established.

In something of an understatement, Foucault concedes that the elements he has proposed here 'are of rather different kinds' (AK 66, 79). However, what appears to deepen the problem in fact provides a way to resolve it. A discursive formation, he writes, is characterised by 'the way in which these different elements are related to one another' (AK 66, 80). The term 'elements' refers here not to the statements themselves, but to the forms of relation between them. In this instance, then, a discursive formation is characterised by a consistency in the relation between the forms of relation between statements; for example, the way the ordering of descriptions is related to techniques of re-writing, or, to take an example from an earlier chapter, the way surfaces of emergence are related to grids of specification. It is, writes Foucault, such a group of relations that constitutes a system of conceptual formation.

These relations are not empirical, in so far as they are responsible for the organisation of what appears at the empirical level (the things of which discourse ultimately speaks), but neither are they generalisations from the empirical. Generalisations drawn by induction are universal at least within a restricted domain, but as such they do not enter into the kind of historical relations described by Foucault. They are generally modified or replaced as a consequence of further empirical research, or in order to achieve greater consistency with other theoretical constructions. Where it is the former, the changes are prompted by the discov-

ery of counterfactual evidence, and as such they are driven by contact with the level of experience from which they were first drawn. Where greater theoretical consistency is the motive, there may not have been a direct reference back to the empirical level, but the changes are aimed at achieving a theory that is more universal (it is made compatible with others to achieve greater range), or has a better balance between simplicity and explanatory or predictive power. In each case, the new version is presented as an approximation to an ideal, as the best available hypothesis for a universal theory. As such, they are essentially ahistorical and the record of theoretical change is one of revisions to a 'fixed' view. What generalisations from empirical experience lack is an intrinsically historical character. By contrast, the relations between statements in discourse follow patterns of regularity that have their own history.

Taking all this into account, it may nonetheless seem as though the architecture of Foucault's analysis is creaking beneath the weight of innumerable extensions, demarcations and additional strata. Yet viewed rightly it retains a surprising simplicity. Discourses are formed from groups of statements that are related in what is admittedly a rich variety of ways. First of all, there are relations pertaining to the discursive object, then those pertaining to the subject, and those pertaining to the concepts deployed. These forms of relatedness are consistent enough to be identified, and to remain relatively stable over time. However, none of these forms of relatedness are enough to constitute a discourse by themselves (for example, no discourse is defined exclusively by the relations between its concepts, regardless of its object). To be a discourse requires all forms of relation to be in play at once, and when viewed in this way regularities emerge between the forms of relation that exist between statements directly. These regularities are the rules to which Foucault refers. But a regularity is not a binding law, and the relations between statements change; and as they change, so too do the regularities that exist between these forms of relation. Foucault's proposal here is that the unity of a discourse is constituted by the linked transformations in the regularities. This can be described as a historical change in the forms of relation that give order to the direct relations between statements, as long as one understands that the 'history' in question is pitched at the level of discourse and is not a history of things, empirical events, propositions or concepts.

To say that the sense of history introduced here is not a history of concepts (for example, of their common features of classification) means that concepts cannot themselves be the currency of historical description. The analysis concerns what Foucault calls the preconceptual level

of 'the field in which concepts can coexist and the rules to which this field is subjected' (AK 67, 81). In truth, the field is nothing besides the rules that give it structure, which is to say that there is not first a field in which concepts can occur and then rules that determine how they may be related. Accordingly, the level of analysis is 'preconceptual' because the relations between concepts establish regularities that function as rules shaping what further concepts can exist and in what relation they can stand to previous concepts; and no concept occurs in isolation from an already established pattern of regularities in the field. The field in which concepts can coexist is therefore preconceptual in a historical sense. Foucault describes the archaeological analysis here as trying to determine the 'schemata' by which statements are linked to one another, which will include the way that concepts are formed and exist in relation to one other. Reference to schemata and concepts inevitably draws the discussion into the province of Kant. However, where the schemata that in Kant's view served as the basis for the synthesis of concepts and intuitions were situated in the mind (playing a transcendental role), the schemata to which Foucault refers here are found in text books, and oeuvres, which are precisely the unities that archaeology breaks down in order to reveal the field to which its 'preconceptual' analyses are addressed. The analyses of this field and the rules that determine how concepts can coexist within it are 'preconceptual' because they deal with the historical conditions of the formation of concepts and of their transformation into new concepts (AK 67, 81).

So here, as in the previous two chapters, the dimension of discourse that Foucault opens up for analysis lies between the transcendental and the empirical, not as an independent domain, but as the medium of their relation to one another. If Foucault takes from Heidegger the idea that the operation of synthesis in the transcendental imagination had to be given a full temporal interpretation in the form of the original temporality of Dasein, he articulates this in terms of the historical character of discourse. What for Kant is the operation of transcendental synthesis, and for Heidegger is the temporalisation of temporality out of which the ontological structure of Dasein's existence emerges, is for Foucault a historical process open to inspection by archaeology only once the unities to which it gives rise have been suspended. As Foucault himself describes the situation here, discourse does not derive its coherence from 'the ideal structures of the concept', and there is no 'silent recollection of a meta-historical ideality' still further back as the founding condition of such coherence (AK 69, 83). Instead, archaeology analyses discourse on the basis of its intrinsic regularities, beginning with 'a complex network of compatibility and incompatibility' from

which emerge regularities that can be described in terms of concepts, their relations and transformations.[7] In this way, thinking is not committed to tracing the origin of meaning back to an ideal point beyond language and thought, and is not caught up in what in *The Order of Things* Foucault calls the 'retreat and return of the origin' (OT 328–35, 339–46). Thinking, like the themes to which it is addressed, is intrinsically historical, in so far as it has no resources to bring to bear on discourse other than those drawn from discourse itself. Moreover, there is nothing mysterious or concealed in discourse that cannot be tracked down, given time and enough care. Although archaeology is faced with 'a very considerable set of concepts and a very large number of transformations that affect both these concepts and their relations', they are 'perfectly describable' (AK 69, 83).

Contrary to how it may appear then, the historical analysis that Foucault proposes is not abstract; if anything, its difficulty stems from a determination to stay as close as possible to the discursive practice it describes. The pursuit of the unity of discursive forms does not translate into the pursuit of universal rules, and the rules uncovered remain local, specific to a discursive formation (and in most cases to a specific aspect of one). This applies to the regularities that describe the changing relation between groups of rules as much as to the direct regularities between statements considered from a particular perspective. A useful point of comparison here would be the work of Michel Serres, and in particular his reading of Lucretius in *The Birth of Physics* where atoms combine according to regularities that codify the process from which they emerge. The laws governing the combinations of atoms only exist *after* a settled pattern has emerged, prior to which there is only a turbulent motion gradually acquiring form. As Serres writes, 'The law repeats the fact itself' (BP 123).

In the final lines of the chapter, Foucault repeats the principle that the rules for the formation of concepts lie in discourse itself, and one should refer neither to a 'horizon of *ideality*, nor to the empirical progress of *ideas*' (AK 70, 84). The analysis of concepts is thereby lined up alongside that of the formation of enunciative types (referred neither to a formal account of the knowing subject, nor to a psychological individual) and of the formation of objects (referred neither to words nor things).

6. THE FORMATION OF STRATEGIES

This chapter sees Foucault turn his attention to forms of regularity that establish lateral or diagonal relations between different discourses. For

example, two discourses that are unrelated in any direct sense may both derive multiplicity from a single beginning, or may both deploy an evolutionary principle. Considering how this occurs, Foucault rejects the idea that chance encounters between different ideas and discoveries are given order by some creative controlling intelligence, and puts to work the same explanatory principle as in previous chapters. Regularities will be sought, so that discourses such as those of grammar, philology and economics might all be seen to share a 'common system of formation' (AK 72, 86). Setting out what an analysis of such formations might involve, Foucault reflects on the studies that he undertook into madness (*History of Madness*), medical discourse (*The Birth of the Clinic*) and the formation of concepts in general grammar, natural history and the analysis of wealth (*The Order of Things*). He notes that each study called for a description of the rules for the formation of objects, modalities of statement, concepts and theoretical choices, but that in each case one or more of these aspects took priority over the others. What he is pointing to here is less clear-cut than a common structure. It is more dynamic and variable, yet nonetheless sufficient to establish patterns of consistency between discourses. Moreover, drawing out these patterns from beneath the familiar framework of chronology and causal connections of one kind or another may reveal links and proximities between discourses that were unexpected, giving rise to new histories.

Foucault outlines three features of the formation of strategies that inform their analysis. First, in tracing the development of a given discourse, one can find points of incompatibility where two elements (objects, types of enunciation, or concepts) appear 'without being able to enter – under pain of manifest contradiction or inconsequence – the same series of statements' (AK 73, 87). These elements may then serve as the starting points for divergent developments leading to distinct sub-groups between which lines of relation can nonetheless be drawn linking the elements in question. From the perspective of an analysis of a given discursive unity, this means that such unities do not spring into life fully formed. Within them often lie a 'dispersion' of sub-groups that are brought together to form the discourse being analysed. However, this does not amount to a simple fusion, and any 'synthesis' of the sub-groups is likely to be incomplete. Other outcomes might have emerged, and understanding why they did not requires consideration of what Foucault calls the '*economy of the discursive constellation*' (AK 74, 88); that is, the discourse studied may be based on a model of some kind, or have been developed in opposition to another discourse, or alongside another discourse, and these factors will influence the formation of the discourse studied from the sub-groups it brings together. As Foucault

puts it a few lines further on, taken together, these relations permit certain statements to appear in a given discourse, or exclude them from doing so. In effect, not only is a discourse constrained by others around it, such that it will not extend (in terms of its objects, types of enunciation, and concepts) as far as it might otherwise have done, but more importantly the actual form taken by the discourse is determined in part by this constraint: 'it is essentially incomplete, owing to the system of formation of its strategic choices' (AK 75, 89). This explains why a discourse may rediscover a new lease of life when transplanted into a different constellation. It is not because implicit content that was somehow there all along has found a voice for the first time; rather, the discourse itself has been modified due to a change in the exclusions and permissions in operation. Finally, the strategy that shapes a given discourse will also depend on its function in a field of non-discursive practices, the way it is appropriated within society, and whether or not it is desirable (and by whom) (AK 75–6, 90). The important thing is that these factors are not extrinsic to the unity of the discourse, as though they were secondary distortions of its true, real and always possible form. The discourse only exists in its actual form and these factors contribute to making it.

The strategy of a discourse can be described as the way it negotiates a future through its relations with neighbouring discourses, bearing in mind that its neighbourhood is itself formed by these relations and is not dependent on a predetermined space. Because the strategy of a given discursive formation is shaped by relations between existing discourses and their sub-groups, it does not have its roots in anything that precedes discourse. A strategy is not 'the expression of a world-view' nor of 'an interest masquerading under the pretext of a theory'; in this way, for example, 'the Analysis of Wealth is more than the conflict of interest between a bourgeoisie that has become a land-owning class, expressing its economic or political demands through the Physiocrats, and a commercial bourgeoisie that demands protectionist or liberal measures through the Utilitarists' (AK 77, 92). The strategies of the respective groups are not ultimately defined by the interests they appear to articulate here, meaning that an analysis of wealth that took those interests and their expression as 'final' would have stopped too soon, contenting itself too easily that the terms appropriate to an answer had been attained. This is one reason why, for Foucault, historical explanation that traces causal links between empirical events will inevitably be shallow and ill-conceived. It is not that there is a more fundamental truth waiting to be uncovered, but just that such an account ignores layers of complexity that contributed to the events it purports to

explain. As in the preceding chapters, Foucault ends by warning against a lapse into forms of account that look outside of discourse to explain the theoretical choices that shape it. These are to be attributed neither to 'a fundamental *project*', nor to 'a secondary play of *opinions*' (AK 78, 93).

7. REMARKS AND CONSEQUENCES

Having set out the conditions for the formation of the key elements of discourse over the last four chapters, Foucault now takes stock, and finds that there appears to be a problem, almost a paradox, in what has been achieved so far. At the outset, Foucault suspended the familiar forms of historical, theoretical and discursive unity on the grounds that they required 'a theoretical elaboration' (AK 79, 94). Yet the analyses carried out to provide that elaboration have left archaeology facing 'an apparently irreducible multiplicity of objects, statements, concepts, and choices', and behind them 'a mass of elements' that render any sign of an unproblematic unity still more remote (AK 80, 95). The proliferation is such that, far from giving critical philosophy a new lease of life, archaeology may be overwhelmed by the magnitude of the task and slow thinking to a standstill. But before expecting some form of unity to be restored, it is worth recalling that several of the thinkers from whose work lines of relation can be drawn to Foucault's *Archaeology* do not regard thinking in this way at all. Bachelard deplores the laziness of mind that allows our attention to rest, when more effort will reveal more to see, more events, more instants (and therefore more time) (TI 77); Cavaillès complains that to assert that one has reached an irreducible intuition is simply to stop thinking (OC 469); and Serres captures the irreducibility of complexity in a passage describing how the Harlequin sheds one multicoloured embroidered coat after another to reveal in the end a striated and iridescent skin that is 'as complicated as all the barriers that protected it'.[8] Nietzsche, too, is fond of masks. These examples, in all their variety, show that thinking can survive the absence of a fixed point at which to aim, but they also draw attention to a lack of clarity over the way thinking 'sees' its object; that is, over the sense and role of intuition.

The early part of the twentieth century saw the emergence of a sharp difference of views over the role of intuition in mathematical thought. On the one hand, Brouwer made it absolutely central to the constructive process of mathematical thought, whereas Hilbert and others regarded the prominence given to subjective intuition as introducing a weakness into the foundation of mathematics. Cavaillès steered a dif-

ferent course, agreeing with Brouwer and intuitionism that the objects of mathematical thought were the result of an ongoing constructive process, but arguing that the emphasis placed on intuition concealed what was in fact the historical character of this construction. However, the move from a philosophy of the subject to a philosophy of the concept leaves the function of intuition within mathematical thought less clear. Although Cavaillès followed Bolzano in breaking the link between intuition and demonstration as a method, intuition continued to play an important part. The difference is that it was now involved in the construction of new stages of mathematical thought through the ongoing problematisation of existing concepts. Intuition, here, is constructive; that is, it is not a relation to a 'given'. It takes place in a strictly rule-governed situation. But in addition, for Cavaillès, it carries mathematical thought to a new stage that would be impossible within the existing rules and conditions. In 'Transfini et continu', Cavaillès develops a sense of 'complex intuition' which is linked not just to one concept by one schema, but to several concepts by several schema, and which is thereby subject to a temporal pluralism (OC 470–1). In this way, the existence of mathematical concepts, objects and methods is strictly historical, and mathematical thought constructs its future on the basis of existing conditions that are historically 'local'. In a different context, though one influenced by developments in mathematics and against the background of a deep engagement with the philosophy of Leibniz, Serres approaches thought as a practice that moves from one locality to another with no general map of the terrain as a whole. These examples, for all their considerable differences, suggest that in one way or another unity is no longer associated with a condition of ideality, or indeed any form of fixedness. Unity takes shape historically, or temporally, without relying on a law or rule that is itself ideal, fixed or even necessarily stable.

In spite of the proliferation of elements and levels of analysis, then, forms of unity do emerge from the account that Foucault has set out so far in this book, and initially they may even appear similar to those familiar forms suspended in Chapters 1 and 2. But in their detail, their construction, and their historical character, they will be quite different, and for this reason the paradox to which Foucault refers in the opening lines of the chapter may be only an apparent one. Discursive unity does not present itself as an object of intuition, and, in Kantian terms, the unifying power is not a concept. Instead, for Foucault, the unity of a discourse arises from the rules in accordance with which its various elements (object, types of enunciation, concept, strategy) are formed, and the rules of their relation to one another. As such, a

discourse is not 'made one' by anything simple, and it is not fixed in a stable form. Rather, it has unity by virtue of the pattern of relations that establish how its various elements occur and combine. As Foucault explains, these relations form a system that governs the formation of the discourse.

Nonetheless, one might still ask: how can there be systems and unities when each phase of the analysis seems to expose further subgroups, elements and relations? How can there be systems and unities in something which is becoming increasingly multiple? Quite how unity is composed over time remains unclear at this stage. However, the answer to this question seems to depend on what is meant by 'system' and 'rule', and how one understands the relation between a rule and what is subject to the rule. Foucault summarises the picture as follows. Strategic choices are selected on the basis of points of divergence in a group of concepts (though no explanation is given of how these occur). In turn, concepts are formed on the basis of forms of coexistence between statements.[9] This means that the order of influence percolates up from statements, to concepts, to strategies; and also that concepts, as forms of unity, arise as statements occur together, presumably often enough to become associated. Accordingly, Foucault writes that choices of strategy cannot directly modify the rules governing the formation of concepts in a particular discourse. Yet, in an example describing a mechanism that proceeds in the opposite direction to the one outlined above, he also adds that a strategy 'can implement some of these rules and exclude others and consequently reveal certain concepts' (AK 82, 97). This process moves from strategy to concepts to statements. Each level does not directly determine the one 'beneath', but selects combinations. There is therefore an influence moving in each direction. This is not an ambiguity or a confusion on Foucault's part, but follows directly from the conception of 'rule' operative here.

Describing a system of formation as 'a complex group of relations that function as a rule', Foucault goes on to write that to define a system of formation is to identify a group of statements by a rule understood as 'the regularity of a practice' (AK 82, 98). This is a regularity in the elements 'regulated'. Yet Foucault also states that 'A discursive formation . . . determines a regularity' (AK 83, 98), so once again there appears to be an influence moving in two directions at once. Of course, this is only problematic as long as one assumes that a rule is a formal condition that limits in advance what is possible in a given sphere, and it has already become clear that this is not the kind of 'condition' Foucault is aiming to establish. The sense of rule at work here describes a regularity that has emerged from the elements to which it applies. A complex

group of relations can function as a rule in so far as they establish a regularity in the formation of objects (enunciative modalities, concepts or strategies) but at the same time they can be regarded precisely as the outcome of a regularity in the elements whose relations they describe (or determine). In this sense, a system of formation, viewed as a whole, is defined by a rule. But at the same time it owes its existence entirely to the series of interlacing regularities (rules) in the 'lower' level orders of which it is itself the rule. One consequence of this way of treating rules is that they do not precede the order to which they 'apply' but rather emerge from it.

This way of understanding rules and their relation to what falls under them has precedents in both Cavaillès and Serres. In Cavaillès one finds the idea of a concept as an operation on elements that were themselves part of the historical process. Moreover, the concept brings together elements that may hitherto have belonged, or simply arisen, in contexts that were not directly related to one another. The intuition by which a new mathematical object is constructed is complex, determined not by a single rule, but by the conjunction of two or more rules, as a result of which what Cavaillès calls 'the zone of intuition' is transformed (OC 470). The elements brought together in this way were positioned in different historical or temporal series, subject to different rules, and as they are drawn together in what Cavaillès calls the 'thematisation' of the current stage of mathematical thought, so the historical or temporal series combine to create a new map of mathematics, its concepts, objects, problems and possibilities. In this sense, the historical unity on which Cavaillès insists is the unity of history, evident in retrospect, and in prospect, in the anticipation that the next step will pull everything together. However, it is less evident if one takes a synchronic view of the present situation, simply because there is no rule or axiomatic base governing the production of every possible element over time. It is a unity always in the making, accomplished in the overcoming of a perpetual moment of crisis, whether this be major or relatively localised.

If history as Foucault approaches it does not exhibit the unity that Cavaillès sees in mathematics, it is at least in part because he is addressing a discursive universe that is at once vaster and more diverse. Medicine, anthropology and economics may be related to one another in a variety of ways that archaeology can describe, but they will tend to communicate less intensively than different branches of mathematics. This more generalised field has been described by Serres in terms that owe much to ancient atomism, where the order defining specific localities – temporal, spatial or discursive – consists in regularities emerging from the flow of atoms and their combinations (see

the Introduction). The open and infinite universe of atomism is closer to Foucault's vision of the aggregation of discursive formations than is Cavaillès' conception of mathematics as a discipline unified by its history, but they share a key element that is reproduced in Foucault's analyses; namely, that the rules governing discursive events are formed within the discourses to which they apply, and that they are continually susceptible to modification. In Foucault's terms, they are not terminal stages (AK 84, 99). In addition, and this is can be seen clearly in Serres but much less so in Cavaillès, the influence works in two directions at once; from rules to what they regulate, and from what is regulated back to the rules.

As Foucault writes, a discursive formation does not freeze time, but rather 'determines a regularity proper to temporal processes' (AK 83, 98), determining the temporal articulation between series of discursive events and other series of events and transformations. As such, writes Foucault, in a description that seems to take over almost exactly Cavaillès' notion of complex intuition, it is 'a schema of correspondence between several temporal series' (AK 83, 99). Yet as a schema, it is not a fixed rule by which these series map on to one another, intersect, support or conflict with one another. It is rather a discernible and evolving regularity between events, series of events and other transformations, as they occur. The important point is simply that a discursive formation does not lie 'behind' or 'beneath' discourse, and it is 'prior' only to each individual event, while remaining open to modification by the events and series of events it articulates. The 'prediscursive is still discursive' (AK 85, 101). One might add that the a priori of history is still historical, but Foucault will come to this idea in a few chapters time.

Part III: The Statement and the Archive

1. DEFINING THE STATEMENT

The chapter begins with Foucault making sure that the reader is still on board, and that the risks of so being have been accepted. Again, he recalls that his aim is to redescribe the traditional unities of historical analysis that have been treated as somehow necessary or self-evident, and to stop looking for the ground of discourse either in a priori knowledge or in experience. Discourse, then, is not the signification of what is, and its rules of formation do not follow the outline of some deeper ontological truth. Yet neither is it grounded in the speaking subject. All aspects of discourse will instead be regarded as constructions, the rules of which are the outcome of a complex historical process that is not just found in discourse, but is the very condition of discourse itself. In preparing this approach, Foucault has used the statement as the point of reference, but now he wonders aloud whether he has 'not replaced his first quest with another' (AK 90, 106), and whether the groups of rules that he outlined in Part II really do define statements. Although not made explicit, this appears to be a reference to the way the rules are themselves the outcome of the processes whose regularities they describe. In this sense, it is statements that define groups of statements and the rules that determine their relations to one another; not directly, but through their distribution, which either consolidates or disrupts existing regularities, and which may contribute to the emergence of new ones. Foucault also voices a second reservation: that the term 'discourse' has been allowed to take on a variety of meanings, according to the specific needs of the account at the time. By way of explanation, however, Foucault writes that 'discourse' was to have 'served as a boundary around the term "statement"', but that its meaning has been allowed to vary 'as the statement itself faded from view' (AK 90, 106).

So while the focus is ultimately on discourse, the idea of the statement that Foucault adopted as a means of opening up its analysis has not been made clear, and this has led to the vagueness that he now wants to resolve. To do this, the present chapter sets out to define the statement, and to assess whether the account of discourse hitherto has been consistent in taking the statement in this sense. The answer to the latter question is broadly, 'yes'. Defining the statement leads to two different ways of thinking about it: as an atom of discourse, and as a function. Foucault is sceptical of the former and takes some time to rule it out. Yet there are good reasons to continue to think of the statement as an atom, even though there are risks associated with doing so that treating it as a function avoids. Ultimately, the two ways of thinking of the statement are not directly compatible, but both identify something important about the statement.

Foucault begins by writing that the term 'statement' has been used both to speak of a 'population' of statements and as a point of contrast to discourse considered 'whole'. He then presents the following qualified description, which immediately raises the question of the relation between the statement and discourse, in other words, of how one statement relates to another to form larger groups:

> At first sight, the statement appears as an ultimate, undecomposable element that can be isolated and introduced into a set of relations with other similar elements. A point without a surface, but a point that can be located in planes of division and in specific forms of groupings. A seed that appears on the surface of a tissue of which it is the constituent element. The atom of discourse. (AK 90, 106–7)

The phrase 'At first sight' implies that the idea is introduced only to ensure its elimination. Foucault immediately lists a series of problems to demonstrate that entertaining it would be a mistake, some of which he goes on to address directly in the remainder of the chapter. These concern the similarity or difference of the statement to other unities to which logicians, grammarians and philosophers of language have previously appealed: propositions, sentences, speech acts. If the statement cannot be distinguished from these, then its use in this inquiry is put in question, and with it the integrity of the inquiry itself.

However, before dealing with these questions, Foucault poses three other questions which are supposed to show that treating statements as the elementary unit of discourse will be a mistake. What does it consist of? What are its distinctive features? What boundaries must one accord to it? (AK 90). The odd thing is that these are questions one would normally pose about *things*, but the association of statements with things is explicitly rejected (AK 97, 114). This suggests, as mentioned

above, that the questions are intended to set up atomism as an unacceptable alternative, but as such they miss the mark somewhat. The difficulty in posing these questions about atoms in the classical sense of either Democritean or Epicurean atomism, is that while there was some speculation regarding the properties of atoms (for example their shape), it is specifically *from* atoms that things with phenomenal qualities are formed. In his study of atomism, *Les Intuitions atomistique*, Bachelard records that certain forms of atomism were compromised by a relatively simplistic ontology of the atom itself.[10] If the fundamental principles of atomism are those of multiplicity and discontinuity, treating the atom as a very small thing is a mistake that ties atomism back to the principles of unity. Conversely, breaking this link frees atomism to disrupt the appeal to fundamental unities (physical or metaphysical) and to open up a philosophy characterised by discontinuity. This is beautifully illustrated in Serres' study of Lucretius, where the principles of flow, multiplicity and contingency shape the whole account. However, Bachelard's account of the particle physics of the early twentieth century appeals to the principles of atomism to describe a similar break with substantialist metaphysics. The 'basic' particles in physics, he notes, have no independent existence (as required of a substance), and their properties exist exclusively through the relations into which they enter. A particle cannot exist in isolation, but only in relation to a configuration of other particles, and as such, the lone particle is a condition of the phenomenal that does not itself appear (see the Introduction). From this perspective, understanding the statement as an atom is not so far wide of the mark.[11] Moreover, the statement is not actually composed of anything. If one breaks apart the various elements that, when placed in relation, may form a statement, one is left not with its constituent parts or elements, but with nothing at all. The statement is both elementary and relational, its 'distinctive features' depending entirely on the combinations it forms with other statements, groups of statements, or non-discursive events. In this respect, the statement as atom successfully breaks the link that tied early forms of atomism back to principles of unity. To make this point explicit, Foucault will introduce the second designation for the statement later in this chapter, calling it a function.

Thinking of statements as atoms ties in with the recognition on Foucault's part that one cannot simply explain why certain statements are made within a given discourse rather than others by appealing to higher order discursive regularities (rules of formation) without taking into account how these emerge from events at the level of statements (and intermediary events at levels between the two). For if statements,

like atoms, do not occur in isolation, but only in relation to other statements and groups, then there is no isolated phenomenon to explain. The 'event' is always already discursive in that it occurs in relation to other elements of discourse: as Foucault has said, the prediscursive is itself discursive. Depending on whether one is dealing with the formation of objects, concepts, enunciative modalities, individual statements or strategies, the perspective of the inquiry shifts, but not its object. One is in effect always explaining the same thing; namely, discourse. For the same reason, there can be no reductionism here, since the move from 'higher level' discursive formations (for example, strategies and rules for the formation of objects) to the occurrence of statements cannot escape discourse to reach an element beyond which analysis cannot proceed. It is worth recalling Bachelard's astute observation that atomism is less a doctrine about things than a question about method.[12] While it may have been prudent of Foucault to avoid associating statements with atoms because of the possible misunderstandings it could bring, it was not necessary philosophically. In fact, Foucault's archaeology has a good deal in common with atomism.

Moving on to the analysis of the statement itself, Foucault contrasts it in turn to the proposition, the sentence and the speech act. The statement can be distinguished from the proposition easily enough by virtue of the fact that there is no direct correspondence between examples of each. Moreover, statements are not expressions of meaning or intention, as are propositions. A single proposition may be expressed in ways equivalent to two or more statements that are irreducible to one another, and conversely a statement could give rise to two or more distinct propositions. The same non-coincidence rules out an equivalence between statements and sentences. Objecting that some sentences may be no more than a single word is not enough, since many statements may themselves be as economical. But there are many examples of statements that cannot reasonably be construed as sentences (Foucault cites verb tables, a genealogical tree and the algebraic formula of the law of refraction as examples). The final alternative is the speech act, which appears at first to be a more likely candidate by virtue of the fact that, like the statement, its identity is tied to the temporal and spatial specificity of the act, whereas a proposition or a sentence can be repeated indefinitely in an endless variety of settings. However, the same problem of equivalence arises, since there are some speech acts that require several statements to be made in conjunction with one another. As Foucault observes, 'These acts are constituted, therefore, by the series or sum of these statements, by their necessary juxtaposition; they cannot be regarded as being present whole and entire in

the least of them, and as renewing themselves with each one' (AK 94, 111).[13]

It was important for the demarcation of archaeology from linguistics that the statement could be distinguished from the proposition, the sentence and the speech act, but showing where the differences lie has been little help in defining the statement, except negatively, as examples of what the statement is not. Moreover, the proposition, the sentence and the speech act each have a specific structure, and specific conditions relating to their constitution that must be met if they are to be what they are. By contrast, the statement is 'less strongly structured, more omnipresent', and has 'fewer features', all of which makes it harder to define (AK 94–5, 111–12). Finally, if one were to remove the structure and features that make propositions, sentences and speech acts respectively what they are, there appears in each case to be a kind of material base left over (*matériau non pertinente*). Could this be the statement, Foucault wonders? It would mean that there is a statement wherever there are signs placed together, which leads to the question of the ontology of signs, and indirectly thereby also of statements. Considering this question, Foucault observes that a series of letters he writes on a sheet of paper are the statement of randomly chosen elements from a rule-governed series, even though they do not meet the conditions required to be a proposition, a sentence or speech act. A different comparison reveals that a series of letters as they occur in a typewriting manual are the statement of how letters occur on French typewriters. But their occurrence on the typewriter itself is not a statement. In this way, Foucault underlines once again that the statement is irreducible either to words or to things. It is more than a blank material occurrence of signs, but less than their codification in language. For a statement to exist, it is not enough simply that signs occur together. The ontology of the statement must in some way involve its relational structure, and moreover its materiality must consist in more than just the physical presence of signs (this is a question that returns in Part III, Chapter 3, 'The Description of Statements').

The statement, then, belongs neither with language, nor with the things of which language speaks. Yet statements are, writes Foucault, essential to deciding whether a proposition is well formed, a sentence is correct, or a speech act has been carried out. Rather than consider statements as another linguistic category to be determined alongside propositions, sentences and speech acts, they are treated as a kind of 'vertical' relation between them and the signs they contain. It is by virtue of statements that one can tell whether a proposition, sentence or speech act contains a series of signs or not. The name Foucault

gives to this vertical relation is 'function' (AK 97, 115), and it is the second fundamental designation of the statement in *The Archaeology of Knowledge*. In general, the term 'function' has a very wide usage, but its sense here is quite specific and is closely adapted from mathematics, where a function defines a relation between two or more variables: for example the function 2a = b + 1 defines the relation between the two variables a and b: individually, each may be given any value one likes, as long as the other then takes the value specified by this relation (the function relating two variables can be mapped as a line on a graph with two axes). Thinking of the statement not as an isolated element from which discourse is composed but as itself already composite, the idea of a function shows how it opens and structures the relation between words and things, and the various relations that form the object, the concept and the enunciative modalities that Foucault described in Part I. This will be explored in the next chapter.

The idea of the function captures the way the statement is a site of integration from the very beginning, rather than a simple element from which relations are subsequently composed. It reinforces the fact that the statement is itself relational, and as such is already discursive. By contrast, thinking of the statement as an atom helps one to see how relations between statements form discursive regularities that act as rules for the formation of objects, concepts, enunciative modalities, and other aspects of discourse. It is tempting to say that the idea of the function describes the 'internal' character of the statement, and atomism provides a way to describe its 'external' relations, but in fact the distinction between the 'internal' and 'external' cannot be drawn. The statement can only map a word onto a thing by virtue of relations that run right the way through discourse into the structure of the statement in question. There is therefore no clear boundary between the 'inside' of the statement and its relations with other statements, groups of statements and non-discursive events.

2. THE ENUNCIATIVE FUNCTION

This chapter repeats the pattern of moving towards a definition of its theme through a meticulous process of exclusion. The theme is still the 'statement', and the possibilities excluded are those which tie the statement back into established elements in language and linguistic theory. The aim is once again to situate the statement between words and things. There are four stages to this process, each of which in turn moves through several steps, and as it unfolds, the profile of the statement as a function becomes much clearer. There is, however, a consid-

erable amount of detail to work through and I shall try to do this as economically as possible.

The chapter opens with a brief and rather allusive anticipation of what it is setting out to achieve. Two points are worth noting. Foucault writes that the statement is not a syntagma, a rule of construction, a canonical form of construction and permutation, but that it 'enables such groups of signs to exist, and enables these rules or forms to become manifest' (AK 99, 116). It therefore acts as a condition that makes it possible for groups of signs to exist in a specific way, and with a specific structure; and it allows the rule that coordinates this structure itself to appear. As such, its association with a notion of the a priori is beginning to emerge, and this theme is taken up later. In addition, Foucault declares that the present chapter will have to examine the 'mode of existence' of signs in so far as they are 'stated' (AK 99, 116). It is tempting to assume that this means that the mode of existence of statements will be examined, but this is not exactly what Foucault writes. There is indeed an ontological question here, but whether it is the ontology of the statement, or of signs in so far as they enter into statements, is unclear.

In section (a) Foucault looks at the statement and its correlate, a term chosen as sufficiently neutral not to prejudice the inquiry. Returning to the example discussed near the end of the previous chapter, Foucault asks what it is that makes a series of letters written on a sheet of paper a statement, when the appearance of the same letters on the keyboard of a typewriter is not. It will turn out, he writes, that a statement has a specific relation that 'concerns itself (*qui la concerne elle même*)', rather than its cause or its elements. Although the meaning of this is not immediately clear, it does allow Foucault to set up a series of contrasts intended to clear the stage for the statement to appear. As one follows the account, it is worth recalling that the statement is not an additional category of language to place alongside the sentence, the proposition, the speech act, or anything else of the kind. Unlike such examples, it does not identify a further possible relation between elements pitched at the same level, but rather acts as a condition of the composition of elements by which such examples acquire their form and identity. It is the scene of the synthesis constitutive of discourse.

The first contrast is with the relation between a noun (proper or common) and what it designates. What is designated by a noun is defined by rules of use (relating to objects it can validly designate and syntactic structures of which it can form a part), and these make possible the recurrence of the noun; indeed, the raison d'être of a noun is that it can recur in such a way that different appearances or cases are

treated as the same (different cars, different appearances of 'Paris'). But even when the same series of words are used according to the same rule of construction, it is not necessarily the same statement. Although this is not explained further, the key lies in the form of recurrence associated with a noun, and made possible by the rules governing its use. Leaving aside the determination of the syntactic forms into which it can enter, a noun is related to an object through rules of use, but these rules express a relation that may already have been decided, often in a way that leaves open considerable room for variation in the nature of the relation. For example, 'car' picks out a class of motorised vehicles, but the way it is mapped onto an object (or class of objects) will not be the same when I point to a car passing in the street, when a spare part is allocated to the correct store, or when it is used in an artwork (and this is not just because they are different speech acts, as Foucault makes clear in the last chapter). The utility of the rules governing the use of a noun are supposed to lie in their allowing one to repeat the relation in an identical way, but a great deal must already have been settled before the rules can do this, or else they will have to be supplemented by many new ones. In fact, the use of a noun such as 'car' relies on a series of supplementary rules, conditions and tacit conventions to plug gaps and create maximal continuity between different contexts, specific referents, and usages. By contrast, the statement is partly responsible for the specificity of these differences, and will therefore itself differ, introducing discontinuity and tending away from the ideality of meaning. The statement allows words to be mapped onto things, not by setting a formal condition, but by taking its place alongside other statements that perform a similar function, and thereby building a 'genre' of language use that determines how nouns can be linked to objects in specific ways: for example, the visual identification of passing vehicles; the allocation of a part according to the vehicle to which it belongs; the provocation of various associations in the viewer (this point is taken up again shortly in relation to what Foucault calls 'fields of association' in contrast to 'contexts'). Introducing statements into the account reveals a dimension that conditions the occurrence of specific forms of linguistic production, that is irreducible to the actual appearance of such forms, yet which cannot exist without them. Because statements provide neither a transcendental condition for the possibility of discourse nor an external determining condition of any kind, it may be tempting to think that the conditions shaping the relation between a word and a thing might arise solely by convention, and could therefore be treated by an empirical history of linguistic usage, but this would be to ignore the ontological dimension of discourse. It would be compara-

ble to saying that Heidegger's *Being and Time* can be read as a treatise on pragmatism, the idea of Being-in-the-world indicating no more than an assembly of conventional practices and attitudes, whereas it should be understood as a way of existing that has a temporal structure invisible to an empirical description.

The relation between a statement and what it states can also be distinguished from the relation between a proposition and its referent. Foucault asks whether a proposition that has no referent is somehow underpinned by a statement that has no correlate. In fact, he writes, it is the correlate of the statement that allows one to decide whether or not the proposition has a referent at all. To say that the proposition 'The present King of France is bald' has no referent, one must already have assumed that the statement refers to 'contemporary historical information' (AK 101, 118), as opposed, say, to the actors in a play. The same principle distinguishes a statement from a sentence. One can only decide that the sentence 'Colourless green ideas sleep furiously' is meaningless once 'certain possibilities have been excluded'; for example, that it describes a dream, or is presented as evidence of mental confusion. To treat this phrase as a statement is not to attribute meaning to it in another way, but to say that it has what Foucault calls possible correlates, some of which determine the resulting sentence as meaningless.[14] The correlate of a statement, Foucault writes, is neither an object (or meaning), nor a relation capable of verifying a proposition (since this would place the statement as an element of language directly in relation with objects and close the dimension of discourse). Instead, he cautiously proposes that the correlate of a statement 'might be defined as . . . a group of domains in which such objects may appear and to which such relations may be assigned' (AK 102, 120), giving a series of examples, such as geographical locations with coordinates and distances. In this way, the meaning of the sentence 'The estate is too small' will change depending on whether the correlate of the statement is a group of locations and distances, or sums of money and their proportions. The same words will make up different statements in each case, and the different statements determine different possibilities of reference and meaning. The correlate of a statement can therefore be described as a kind of vacant placeholder that defines the kind of relations into which a proposition or sentence can enter, and by virtue of which they are taken to refer to something or to have meaning: different objects may occupy that space, but it is nonetheless unique in its embodiment of a specific relation to the proposition or sentence.

Section (b) outlines a similar role for the statement in relation to the subject. As in the case of the object, the subject of a statement is not

equivalent to the subject of the same series of signs taken as a proposition or a sentence. This is to say that the subject of a statement is not simply the one who speaks, since an actor reciting a part does not appear to be the subject of the statement as it is made. Yet neither is the author a viable candidate, as the kinds of description, dialogue and narrative voice used within a novel mean that a single person cannot be the subject in all cases. Foucault concludes that the statements one finds in such an example do not imply the same relation between the enunciating subject and what is being stated (AK 105, 123). One might object that literature is a special case from which one cannot generalise, but Foucault denies that this is the case. The subject of a statement is essentially 'an empty function' that can in most cases be filled by different individuals (AK 105, 123). The example of mathematics provides a clear demonstration of this. As Foucault notes, any individual whatsoever can be the subject of the proposition: 'Two quantities equal to a third quantity are equal to each other' (AK 106, 124). Other cases exhibit a more complex set of possibilities. So where a sentence that begins 'We have already shown that...' occurs, the statement is placed in a well-defined series of events that it must follow, and which the subject of the statement must have performed in turn. However, the individual reading the treatise need not have actually have performed each statement. While the series of statements that 'rightfully belong' to the enunciating subject are at the disposal of the reader, the reader is at liberty to choose the degree to which he follows in those footsteps: he may think through each stage of the proof, or he may dip in and out, making himself the subject only of selected statements (or he may place himself in the position of subject for each of the statements, but without conviction and without understanding).

The subject of a mathematical statement of this kind is not necessarily someone who has actually carried out these operations, who has interiorised them, retaining them in 'the living present of his thought' (AK 106, 124). This is essentially the Seventh Rule in Descartes' *Rules for the Direction of the Mind*, but the use of the phrase 'living present' is clearly a reference to Husserl, and Foucault distances himself from the phenomenological view. The key issue is the relation of the subject of a statement to time. For Husserl, the necessity of a mathematical demonstration depends on evidence revealed in an experience of certainty belonging to the subject, and it is therefore essential that at some point the *potential* for an individual to become the subject of each of the statements forming the demonstration is *actualised*. But when Foucault writes that 'The subject of such a statement . . . will not be described as an individual who has really carried out certain operations, who lives

in an unbroken, never forgotten time...' (AK 106, 124), it is clear that one does not become the subject of such statements by grounding them in a temporal unity. In contrast to Husserl, Foucault is closer here to Cavaillès, for whom the necessity of mathematics was founded on the rules for mathematical thought operative in a given domain at a given time, which in their turn depend on the history to which they belong. Mathematical thought is not rooted in a fulfilled intuition, but rather in demonstration, and the individual subject can move in and out of the position that defines her as the subject of a given mathematical demonstration without compromising the integrity of the demonstration itself.[15] Although the subject plays an important role here too, it does not hold the steps of a demonstration together in a 'living present', but rather enters into a history that can be followed, and '*lived through*' precisely because it is temporally dispersed.

Having set out analogues of the object and the subject of the statement, in section (c) Foucault deals with what he calls its 'associated domain'.[16] Again, the contrast is with propositions and sentences. It is generally accepted that in order to be well formed, they need only to follow certain rules of construction, which are thus presupposed by the proposition and the sentence, and on the basis of which one can tell whether the series of words in question amount to a sentence or not. As such, these 'axioms' are already distinct from what is intended by an 'associated domain'. This becomes clear if one considers that on the basis of these rules (or axioms), a proposition or sentence can be recognised as such without any requirement for a context of propositions and sentences around it. A context may be indispensable for telling whether the proposition or sentence is true, or what it means, but that is a different issue. By contrast, the enunciative function 'cannot operate on a sentence or proposition in isolation', which means that statements cannot exist in isolation (AK 109, 128). For a statement to link a sentence or proposition to a particular object or kind of object, and to a particular subject position, 'it must be related to a whole adjacent field' of other statements (AK 109, 128). This is the 'associated domain'. Having distinguished the associated domain from the context, Foucault then considers the relation between them. Where 'context' establishes truth and meaning at the level of propositions and sentences, the associated domain makes a context possible and determines it. As he notes, the difference between a conversation and a laboratory report can be explained in terms of context, but context itself cannot be explained simply in terms of the experience of the speaker, and the precedents of which they are conscious. Its conditions extend further than that, since the way that statements present themselves to the subject and are

arranged, remembered or forgotten will itself depend on pre-existing demarcations between contexts (for example, conversation, science, literature), which are themselves determined discursively; that is, on the basis of rules of formation arising from the relations between statements. It is the associated field that 'turns a sentence or a series of signs into a statement, and which provides them with a particular context, a specific representative content' (AK 110, 129).

There is, arguably, a degree of ambiguity here, and although it may be easy to resolve, it is worth highlighting because it draws attention to an important issue. An associated field makes a context possible by providing a background on the basis of which formal rules can be established (for example, to determine what counts as a sentence or a proposition). The background is one in which regularities are already evident that demarcate the sum of all statements into fields. One might therefore say that a context is the formalisation of an associated field. But to put it this way assumes the existence of a process within which an enunciative field, defined by regularities, is merely an intermediary stage on the way towards the complete formalisation of conditions that defines the context. This would place the whole archaeological account back into the framework of a teleological theory. Alternatively, we can regard definition by regularity and definition by formal rules as two distinct and even competing models. In this way, the determination of formal rules on the basis of regularities in the associated field is a temporary, and local, specification which will give way to modifications in the associated field as and when they occur. The crucial difference here lies in the kind of condition that is an associated field. Foucault writes that 'there is no statement that is not surrounded by a field of coexistences, effects of series and succession, a distribution of functions and roles', and that this allows statements 'to follow one another, order one another, and play roles with respect to one another' (AK 112, 131). It is, then, the relations a statement bears to other statements in an associated field that condition the relations it *can* bear to other statements in the field. These relations are not fixed, as they would be in a context determined by formal rules of construction and use. Instead, the statement ties a sentence or proposition back into 'a space in which they breed and multiply' (AK 112, 131). The associated field is a condition of transformation, not identity, and this is its most decisive difference from the notion of a context.[17]

The same concern with transformation runs through the final section in this chapter, which addresses the materiality of the statement, once again through a contrast with propositions and sentences. There is a sense of materiality that arises from the simple fact of a form of words

appearing at given time and place. That such an event is necessarily located in this way by virtue of sound, ink on paper, or the illumination of a screen means that it is unrepeatable. Each time a sentence is uttered, a book printed, or a line or scene from a film screened, the inevitable difference in its materiality appears to entail a difference in the event itself. While acknowledging that the 'coordinates and material status of a statement are part of its intrinsic characteristics' (AK 113, 132), Foucault nonetheless sets about distinguishing the materiality of the statement from this way of thinking about it. First, such a conception treats materiality as accidental, a principle of individualisation that nonetheless does not contribute to what something actually *is*. In this respect, it follows classical philosophy in binding essence to form, and treating materiality as extrinsic to both. By contrast, materiality is said here to be 'constitutive of the statement itself' (AK 113, 133). Moreover, the consideration of a series of examples suggests that the statement is in fact repeatable in ways that the simple enunciation of a sentence cannot be, for the reasons outlined. But if the statement is contrasted to the simple enunciation of a sentence by virtue of its repeatability, this does not mean that it can be lined up alongside the formal characteristics that give to the sentence an 'underlying' or essential sameness to which one can always revert, once the accident of its enunciation has been taken into account. The materiality of the statement, then, cuts across the categories of form and matter as traditionally understood. Instead, the materiality of the statement is defined by its status as a thing (AK 115, 135).

Foucault's example (helpfully returning our thoughts to the unities discussed in Part I, Chapter 1) is that of a book, such as Baudelaire's *Les Fleurs du mal*. Different copies do not count as different statements, since the contingencies of ink and paper are 'neutralized in the general element' of the book, which is 'material, of course, but also institutional and economic' (AK 115, 135). Even new editions that reproduce previous editions without any alteration can be treated as equivalent. However, when the line 'Le sommeil est plein de miracles!' appears in the 1868 edition of *Les Fleurs du mal*, it is a new statement when compared to the same line in the 1861 edition, since Baudelaire died in 1867, making the later edition posthumous and placing it in a different institutional and economic set of relations. It is these relations that define the materiality of the statement, not its spatio-temporal location. But whereas the spatio-temporal location of a statement would mark it as unique and unrepeatable, the institutional relations in which it is embedded define its possible reinscription and transcription (AK 116, 136). The variability of these relations bears on the materiality of the

statement, which is thereby the condition both for the individualisation of the statement and for its transformation.

As Foucault's book progresses, the same themes recur over and over again, receiving further elaboration each time. Having been rethought through the discussion of materiality, the statement is now described as irreducible to an empirical reality (fact or event), yet not an ideal. It is, writes Foucault, 'Too repeatable to be entirely identifiable with the spatio-temporal coordinates of its birth ... too bound up with what surrounds it to be as free as a pure form' (AK 117, 138). Neither one nor the other, the statement forges a third alternative that empiricism and idealism both exclude, existing as a material figure with its own history.

3. THE DESCRIPTION OF STATEMENTS

This chapter might be viewed as another pause during which Foucault takes stock of what he has done so far and where it has brought the inquiry, above all in view of the fact that the account of the statement has undergone a certain semantic drift, allowing a vagueness or ambiguity to enter that he now intends to resolve. Yet it turns out that this drift is for good reason, and indicates a movement drawing the account towards the point where it can best accomplish its aim. Several questions need to be addressed, however. First, the definition of the statement itself has to be reviewed. Foucault concedes that he initially expected the statement to be a kind of unity for which he need only 'describe its possibilities and laws of combination' (although in fact it is difficult to see that he ever actually proposed such a view in this book) (AK 119, 139). The subsequent account revealed an enunciative function that involved 'various units' (sentences, propositions, series, signs, fragments), and related them to objects, subject positions and domains of coexistence in which they could be used and repeated. As Foucault remarks here, 'what has been discovered is not the atomic statement' (AK 119, 139). Certainly not; at least, not if one takes 'atomic statement' to refer to a single, isolated unit that subsequently combines with others. As I outlined earlier, however, this is not how the atom is best understood, it was not how Foucault defined the statement in Part III, Chapter 1, and it does not appear to have been the idea of the statement at play even before that. This needs to be borne in mind as one follows Foucault's appraisal of the shift from the statement as 'unit' (or atom) to the statement as 'function'.

The first task Foucault sets himself is simply to give precision to the terms he has used; above all, that of 'discourse'. So far, he notes, it

has been used as 'what is produced by a group of signs', as 'a group of sentences or propositions', and as 'a group of statements' (AK 120–1, 141). Each successive usage has more precision than the last, reflecting Foucault's increasing awareness of what is required to deal with the question he has chosen to address. The definition of discourse presented here is that it is constituted by a group of statements that allow 'modalities of existence' to be given to sequences of signs (AK 121, 141). Discourse, then, concerns the ontology of language, as long as what is meant by 'language' is kept open, and assumptions regarding propositions, meaning and expression are suspended. In fact, there is a parallel between the sense of ontology intended here and Heidegger's approach to ontological questions in the light of the ontological difference. What is sought is not literally *what* something is, but the *way* that it – in this case language – exists. In *Being and Time*, discourse (*Rede*) is the ontological foundation of language and its structure is modelled on the Being-in-the-world of Dasein.[18] Heidegger's interpretation of Being-in-the-world in terms of ecstatic temporality then provides the fundamental ontological structure for the disclosure of Being. Later, in the 'Letter on Humanism' and the essays on poetry, Dasein plays a less central role and language comes to the fore. What is common to Heidegger's approach throughout, however, is that language is studied as a structured event of disclosure. It is easy enough to see that archaeology opens up the field of discourse as language in act, in itself, and not as something to be understood in terms of that which produced it (the subject), or which it produces (meaning). Discourse is the sum of statements, and archaeology addresses 'the fact of language'; which is to say that it analyses language 'itself' and the conditions on the basis of which meaning can be embodied in language, thereby becoming a theme for interpretation, with all the scope for ambiguity, concealment and its reversal that this involves. For archaeology, there is nothing behind discourse. Perhaps the most decisive difference between archaeology and Heidegger's hermeneutic ontology follows from this, namely that Foucault treats language in terms of construction, not disclosure. Therefore the question concerns not what speaks through language, but what language itself says. And what it says is constructed from the rules of discursive formations that emerge from discourse itself. There is nothing anterior to discourse, because discourse itself is the making, unmaking and re-making of worlds (like Penelope, a favourite of Serres', weaving by day and unweaving by night).[19] So while Foucault can describe discourse, as did Heidegger, as the ontological condition of language, this is because it is the site not of the disclosure of Being, but of the construction of what is. As Foucault intimated in the first

two chapters of the book – and as will become increasingly clear as it proceeds, above all in the chapter 'Change and Transformation' – an understanding of discourse in terms of construction will involve time in the form of temporal dispersion.[20]

The following paragraphs continue to invite comparisons with Heidegger. There is something paradoxical, Foucault notes, in the way the description of statements does not try to discover what lies beneath the surface of language, even though the statement itself is 'not immediately visible' (AK 122, 143). In fact, it is not that the statement is hidden, so much as that it requires a change of perspective to be seen. What Foucault means by this is that it is not separable from the linguistic act it constitutes as a proposition or a sentence, and therefore cannot be concealed by it. Rather, as 'invested in unities of this kind' the statement characterises 'the very fact that they are given, and the way in which they are given' (AK 124, 145). As speakers, listeners, writers and readers, our attention is drawn to what is being said, to meaning, and perhaps to the style of presentation. But as our attention is drawn, the simple fact that language exists is passed over. The parallel with the way, for Heidegger, the ontological difference is concealed by one's involvement with things is striking, and the impression is strengthened when Foucault writes that the statement shares the 'quasi-invisibility' of the 'there is' (*il y a*) in the expression 'there is this or that thing' (AK 124, 145). What is missed is the structure of the presentation of the thing; precisely what phenomenology sought to elucidate, and what structural linguistics examined in a wholly different way. Also missed is the role played by language in the fact that a thing *is*; that is, the ontological role of language. And if attention is shifted one step further from the presentation of the thing in language to the event of presentation itself, then the ontological focus falls squarely on language, on the fact that 'there is *language*' (AK 125, 146). However, this does not reflect the practice of archaeology, and is at best something that comes along with the analysis of discourse without becoming its focus. The attention to language itself was an important part of French literary modernism, and of the work of Maurice Blanchot in particular. Arguably, Blanchot took the analysis further still, exposing language in its materiality, separated from its signifying function altogether. In its blank infinity, this is language 'prior' to its taking on the form by which meaning, reference and expression are articulated. The aspiration to let language 'itself' appear, apart from the use to which it is put, is very close to what Foucault is proposing with the idea of discourse and the statement, but actually goes further still. Further, because for Foucault discourse carries out the ordering of word and thing, and situates the subject

in relation to what is said about them, and as such discourse cannot escape its function. Language apart from this ordering would not be discourse. It is in modern literature, Foucault writes (in 'The Thought of the Outside'), that language 'escapes the mode of Being of discourse'.[21] There, in the work of Stephane Mallarmé, Georges Bataille, Georges Klossowski, and above all Blanchot, language achieves what, in view of the account developed in *The Archaeology of Knowledge*, is a remarkable state: it develops to form 'a network in which each point is distinct, distant from even its closest neighbours, and has a position in relation to every other point in a space that simultaneously holds and separates them all'.[22] This, Foucault adds, is language in its 'pure dispersion'; as if statements really were atoms in the void, and had been pressed back to a point before their discursive function of mapping the elements of language on to one another in the order of signification. Yet the term 'before' is perhaps inappropriate here, implying a real possibility of tracing back from discourse to such a state. However, such a move is impossible, since the antecedent stage to every configuration of discourse, every constellation of statements, is another configuration, another constellation. As Foucault has observed several times, a statement cannot exist in isolation from all others. The infinity of language beyond discourse in its pure dispersion is therefore something that, for Foucault, remains permanently within language, without ever being possible (that is, conditioned by discourse). In the language of atomism, the 'first model', in which atoms rain down in parallel lines through the infinite universe before any collisions, is not a state that can ever return, or which somehow persists beneath the order and the chaos that came after it. Because the laws governing the combination of atoms only emerge later (and moreover are spatially and temporally local), to account for a given condition one has to trace its antecedents. Similarly, the analysis of discourse accounts for a discursive formation by finding the rules that define it, which are themselves formed historically. The historical analysis of discourse therefore traces both series of events and the way such series are formed. This means that what for phenomenology is the ontological task of determining the structure of the event of disclosure has its archaeological analogue in the historical analysis of construction. One could say that the event of presentation, and the ontological character of discourse, have to be addressed in and through the history of discourse itself.

A further reason for the invisibility of the statement is that it is implied by every other analysis of language without being made explicit (AK 125, 146). What a series of brief examples shows is that, in Foucault's view, other forms of analysis take their point of departure

from their identification of language as finite, without delving further into how that finitude arises. For such analyses, the 'enunciative field' has already been determined, but it is just this event that the analysis of discourse aims to bring to light. The comparisons with Heidegger are therefore still relevant, since his analyses are always concerned not just with the finitude of Dasein and of Being, but with tracing the very mark of finitude in the disclosure of Being, whether this be in terms of the finite temporality of Dasein, the strife between world and earth, or in the event of *Ereignis* and the history of Being. The difference, again, is that the condition of the finitude of a linguistic production is, for Foucault, itself a local and temporary configuration in the history of the relations between statements. To account for the finitude of disclosure, archaeology simply continues to analyse discourse, searching out points of divergence and discontinuity, and the patterns of regularity that produced them. This is how archaeology is intended to repeat, differently (and more successfully), the analytic of finitude that Foucault describes in *The Order of Things*, which failed to secure the foundation it sought for knowledge in the figure of man as a finite being. From a Heideggerian perspective, the objection to what Foucault is proposing here is simply that by insisting that the fact of discourse can be analysed historically, without engaging the question of the possibility of discourse as such, he fails to address the question of the ontological condition of his own inquiry, because he has not engaged with the question of Being. The criticism assumes that any inquiry that limits itself to determining the Being of a given kind of thing will be regional, and as such in the grip of ontological assumptions that close off the true ontological ground of its own practice. To an extent, Foucault can deflect this criticism simply by insisting that archaeology addresses the discursive conditions for the practice of ontology, since without a certain precise history of relations between statements, involving objects, concepts, enunciative functions, and all the elements of discourse, the question of ontology could not be posed. Archaeology, then, has its own priority over ontology. Foucault's confidence in this approach is clear when he writes that the analysis of the enunciative field will remove 'the transcendental obstacle that a certain form of philosophical discourse opposes to all analyses of language in the name of the being of that language and of the ground from which it should derive its origin' (AK 127, 148). Although Heidegger is not mentioned by name, the allusion is unmistakable. However, the issue is not settled so easily. One could object that archaeology addresses the 'regional' question of what makes the elements within a given discursive formation what they are (objects, concepts, enunciative modalities), but neglects the 'fundamental' question of what it is to be

an element of discourse in general. The question is a stubborn one that can nag away at Foucault's analysis, in part because it is not addressed head on. Yet this is not really an oversight on Foucault's part, as he has a reason for not dealing with the problem directly. A full response will involve the status of archaeology itself, and the impossibility of conducting an analysis of the conditions of one's own time, considered in the round; an issue Foucault will discuss in terms of the archive later, in the chapter 'The Historical A Priori and the Archive'. Briefly, to be an element of discourse is to be defined according to rules that emerge as regularities within the history of discourse. Because of the recursive mechanism by virtue of which what is conditioned bears on the conditions that preceded it, there is no 'final' answer to the question of what it is to be an element of discourse; that is, no answer that escapes the historical process and is immune to transformation. This is why ontological questions are transformed into historical questions, and why there is no place for a distinct 'fundamental' analysis to underpin the 'regional' analyses that Foucault presents. The shift from ontology to history hinges on the introduction of temporal dispersion, which opens up the possibility of reconfiguring the temporal conditions of disclosure as the historical conditions of construction. However, it is not that ontology gives way to history entirely. If anything, ontology has to take history into itself, just as mathematics did before it.

In Section II of this chapter, Foucault considers whether the description of statements he has given is compatible with the earlier account of discursive formations.[23] As he often does, Foucault catalogues the approaches that he is *not* taking. He is not presenting a theory or model applicable to empirical descriptions (as this would enter the account too late, once discourse had already worked to assign possible objects to signs, and in addition it would insulate each locality of discourse from the feedback coming from the actual relations it maps). He is neither inferring a description of discursive formations on the basis of a definition of statements, nor vice versa (as this would mean either one or the other aspect was simply 'given', but this can only be the case once discourse has assigned objects to signs). And he is not proceeding by linear deduction. Rather, he intends to 'reveal . . . a regularity' that made it possible to say what he said. This brings sharply into focus the question of whether Foucault risks reproducing the doubling between condition and conditioned that he identified as a problem in the configuration of thought in modernity (a question that has been circulating in the shadows for some time). But the key lies in the relation between the condition and what it conditions. In classical metaphysics, Kantian philosophy and phenomenology (to mention just three of many possi-

ble examples) there is a separation between conditions and conditioned that is most usually presented as parallel to the transcendental-empirical divide (or a meta-level to the level it orders). In this case, whether it be Platonic forms, the transcendental a priori, or the formal basis of nomological science, the condition precedes the conditioned and remains insulated from it. This is not the case with regularity, since it involves a coincidence of condition and conditioned. But whereas traditional metaphysics finds the coming together of condition and conditioned only in a necessary being that is *causa sui*, in archaeology the 'conditioning' regularity falls together with the 'conditioned' regularity because a regularity as formulated in a law or rule is merely descriptive of the regularity that has emerged. As Foucault explains, 'the discursive formation is characterized not by principles of construction but by a dispersion of fact, since for statements it is not a condition of possibility but a law of co-existence' (AK 131, 153). For this reason, any discontinuity or deviation in the regularity as it occurs will have an immediate impact on the law (or the principle of construction): there is no separation between them, or no separation that is not bridged by events. The step from empirical to transcendental, or from the physical world to its metaphysical ground, is transformed into a step within a historical process, and with that step philosophy becomes essentially historical.[24] This can only happen because there is a two-way communication between conditions and conditioned. Discursive formations are groups of statements linked at the level of statements themselves, and by virtue of these links it becomes possible to define rules for the formation of their objects, their modes of enunciation and subject positions, their associated domains, forms of succession and simultaneity, the way they are institutionalised, used and combined together, and finally the way that they become instruments for desire or interest, and elements for a strategy. From one perspective, the possibility of defining each area and level of regularity arises first of all at the level of statements. Yet each statement already coordinates all of these elements, and it can only do so effectively when grouped with others to form a coherent discursive formation marked by clear patterns of regularity. From a second perspective, therefore, discursive formations reveal the level of the statement: 'The two approaches are equally justifiable and reversible' (AK 130, 152). The two approaches are in fact only methodologically distinct, and can be seen as abstractions from a single process.

Because the conditions of any discourse are caught up in the structures and transformations they describe, Foucault can draw the conclusion (repeated here) that discourse is 'not an ideal, timeless form that also possesses a history' (AK 131, 153), a view that could be attrib-

uted to phenomenology (above all in its Husserlian form). Discourse is intrinsically historical, with its own specific limits, transformations and modes of temporality. This is a point to which he will return later.

4. RARITY, EXTERIORITY, ACCUMULATION

At the close of the last chapter, Foucault wrote that he would move on next to consider what is involved in the analysis of the enunciative field, what it requires and what it excludes. Various themes are presented and discussed in this chapter, including a kind of economy of statements, and the question of power in relation to discourse. It unfolds via another series of contrasts between the analysis of discourse and other forms of inquiry and interpretation organised around the spatial categories of interiority and exteriority, but it is not an accident that the theme of time moves increasingly to the fore as Foucault considers how discourse acquires its structure, its movement, and even the direction of that movement.

Foucault describes an orthodox approach to the analysis of discourse as one that searches out the meaning of texts (and sub-textual groupings, institutions and practices extending beyond texts and between them) and charts the relation between these meanings, with a view to building up larger configurations. Ultimately, such an approach aims at a determination of the totality of possible meanings to which a given text or proposition belongs. However, this is achieved by setting the conditions within which the interpretation of the text can legitimately unfold. The space for interpretation is therefore bounded, but it is also continuous, and as such it can always be divided in such a way as to reveal 'new' meanings within the limits set. Still from this point of view, to choose one meaning is to deny existence to a second, or even to many others, which remain hidden as the unsaid – propositions defined as possible by the boundary conditions of the discourse, but never actualised, like the possibilities for the world passed over by a Leibnizian God. In contrast to this view, Foucault's conception of discourse does not define a totality of possibilities, but rather a certain number of actually existing statements, each in turn coordinating propositions and sentences. With no internal dimension, discourse is 'identical with its own surface' (AK 135, 157), and the surface itself is anything but a seamless web in which each position is, or could be, occupied. Rather than a continuous space of potentially infinite interpretation, discourse is said to be 'a distribution of gaps, voids, absences, limits, divisions' (AK 134, 157). This is a discontinuous, atomistic, space. Keeping the contrast with a continuous space in mind, one can see that what is not

stated in such an arrangement is not suppressed, simply because its not being stated is not the frustration of a potentiality in its drive towards actualisation, or the denial of a possibility that exists waiting to be realised. In the space of discourse, what actually occurs is bordered not by unactualised possibilities, but by a distribution of actual statements, broken up by the discursive void.

If there are no unactualised possibilities, it might be asked how discourse can change at all. However, variation comes not from a rounding out of what is made actual within existing bounds, but rather by a change in the prevailing rule or regularity produced either through its disruption by another rule, or by its imperfect reproduction. Summing up, one can describe the difference between discursive formations in Foucault's analysis and their more orthodox counterparts in terms of the structure of the space characteristic of each. In the 'continuous' space of interpretation there is always room for variations and alternatives alongside what already exists, whereas in the discontinuous space of the analysis of discourse what actually occurs is all that the conditions at the time permit. This is why the relations between statements, especially when looking at large-scale discursive formations, have to be established not just by finding a rule that unites them, but by tracing the relations between the rules or regularities by virtue of which they exist.

Because the statements that occur are not taken from a lake of possibilities, any number of which may be actualised, they are said by Foucault to be rare. This rarity gives them a certain value and leads to their collection, as the meanings in them are repeated, multiplied and ultimately transformed. As Foucault puts it, 'To interpret is a way of reacting against enunciative poverty' (AK 135, 158). In a kind of ironic twist, then, discourse as archaeology understands it promotes an interpretive practice that does not even recognise its existence. Moreover, as Foucault explains, in failing to recognise discourse for what it is, interpretation also misses a significant consequence of the rarity of statements. For this makes them desirable assets in a discursive economy, and as such they can become the focus for struggle and conflict. In this way, Foucault's conception of discourse 'poses the question of power' in a way that a theory of interpretation could not (AK 136, 158).

It is perhaps no coincidence that having raised, albeit almost in passing, the question of power, Foucault moves towards a consideration of the practice of analysis in the absence of an authority that sets the bounds of its legitimacy. Historical description, writes Foucault, has usually been motivated by a desire to leave behind exteriority, characterised by 'contingency or mere material necessity', in favour of a more essential domain of interiority, thereby reversing the work of

expression to rediscover the deeper intentions behind it. The move is reflected in the division between history and philosophy, as it is usually drawn, where philosophy may take the form of the recollection of the Logos, the teleology of reason, or the problematic of the trace; apparently thinking of Heidegger, perhaps of Derrida, Foucault refers here to the pursuit of 'a point prior to all speech . . . the gap of deferred time'. Ultimately, it almost doesn't matter to Foucault which form prevails, as 'it is always the historico-transcendental theme that is reinvested' (AK 137, 159). Avoiding this move is therefore crucial to Foucault's response to the closure of the history of thought brought about by the division between transcendental philosophy and the human sciences as he describes it in *The Order of Things*. The task of analysis is not therefore to explain the field of statements by 'translating' operations or processes that have already taken place 'in men's thought, in their consciousness or unconscious, in the sphere of transcendental constitutions' (AK 137, 160). Foucault's point here is not simply that the material elements of signification are impossible to eliminate, and that a pure interiority is a dream. Such a view, which could be attributed to Derrida, willingly or otherwise concedes too much to the 'historico-transcendental theme' Foucault criticises. Instead, Foucault chooses to situate thinking entirely in the realm of exteriority, in the discursive practices that are shaped by the history of their own construction. This in no way means that the subject is excluded. If to think is to engage in discursive practices, in order to think, the subject has to leave the space of interiority and engage in what lies outside. In fact, that the identification of thinking with rule-governed discursive practices (and of course their analysis) is not at all as dry and dusty as it sounds, and above all that it is not a foreign territory for the subject, can be seen in what appears to be an allusion Foucault makes here to Blanchot. Mentioning a term closely associated with Blanchot, he wonders aloud whether it would have been right to speak of 'neutrality' rather than 'exteriority' (AK 137, 159–60), but decides that it would not. In view of Foucault's admiration for Blanchot's work, the fact that he elects not to use the term may be taken to say more about his own aspirations than to imply any criticism of Blanchot. The word, he writes, too easily implies a 'suspension of belief' and an 'effacement . . . of all position of existence', actions that both lie too close to the phenomenological theme of the *époche*, and that promote a practice of thinking whose first move, indeed whose condition, is to disengage from the world with which it deals. Refusing this, Foucault throws his vision of thinking into relief as a practice utterly embedded in the world, not by virtue of a decision to be *engagé*, but simply because there is nowhere else, and no other way,

for thinking to take place at all. Once again, Cavaillès is relevant here because of the way he displaced the subject from its sovereign position in mathematical thought, which he understood purely as demonstration: the unfolding of a train of thought according to certain rules, but also the transformation of the space, and the terms, in which that thought is carried out. Without assuming that they work in precisely the same way, the description of thinking as an operation carried out in a concrete situation determined by rules which are themselves historical could easily be applied both to mathematics and to discourse as Foucault understands it.

Three points are then made in quick succession, which are almost reminders of what should by now have already become clear about the relation between discourse and the subject. First, Foucault recalls that discourse is autonomous, though dependent (because it requires speakers, and the material reality of language, but also institutional forms); second, that the various forms adopted by the speaking subject are 'effects' of discourse; finally, if discourse is not the expression of events in consciousness, then the time of discourse is not modelled on the time of consciousness. This last point is very important, and should be read for what it means for the subject as well as for what it means for discourse: turning the declaration around shows that to think is to engage with temporal structures in discourse that are different to the settled rhythms one takes for one's own. This appears to be what Foucault meant by welcoming the Other into the time of our own thought (AK 13, 21).[25]

The theme of time also runs through the following three paragraphs, which appear to fill in the gaps in a picture that has already become fairly clear. It is no surprise that the analysis of statements operates 'without reference to a cogito' (AK 138, 161), and Foucault has already stated that it is not concerned with language as expression or representation from the position of a subject. Rather, the analysis of statements looks not only for relations and regularities within what is said, but also for the transformations to be found there. This doesn't explain the mechanism of transformation, but it is a reminder that revealing transformation is an important part of archaeology. It is worth noting here that explanation itself deploys a form of continuity, as reason fills in gaps to establish, if it can, a seamless progression from cause to effect, from origin to end. Foucault's rejection of this sense of continuity undermines the prejudice against archaeology for not being able to explain the transformations it describes. Discourses are frequently attributed a kind of inertia, as though they were a dead weight that had to be animated by the interest we take in them: perhaps

they will be read, and the now distant events to which they refer will be brought back momentarily; maybe their signs will be interpreted to reveal a life now forgotten (AK 139, 161–2). Yet such a view assumes that discourse itself has no life, no time or history, of its own. As long as such a view prevails, it is hard to see how the analysis of discourse can effectively reveal change and transformation, for which the cause must always lie elsewhere. In this way, the criticism that archaeology has nothing to say about change and transformation looks circular, as it assumes in advance that discourse has to be animated by memory, intention and the life of the subject. By contrast, the existence Foucault envisages for discourse is dynamic and capable of generating transformations without appeal to an external cause.

Following a few brief remarks on the institutional conditions for the existence of statements across time, and the need to consider the specific ways in which statements are grouped and accumulate, Foucault reflects on the '*recurrence*' of discourse. This term is used in mathematics to describe the recursive definition of a sequence by a function. However, it is also a term that Bachelard and Serres use to describe a form of history in which the present reconfigures its own past, and it is to this usage that Foucault refers here.[26] Statements, Serres writes, redistribute antecedent fields of elements to which they are related. In this way, a statement 'constitutes its own past, defines, in what precedes it, its own filiation, redefines what makes it possible or necessary, excludes what cannot be compatible with it' (AK 140, 163). This repeats Serres' description of recurrence in the history of mathematics as 'a movement belonging to the temporality of mathematics as such, by virtue of which it presents itself as a continual systematic restructuration'. As Serres goes on to say, it is as if 'what is constituted last puts back in question the whole of constitution' (HI 99). This view of the history of mathematics was shared by Cavaillès, for whom the future of mathematics was literally impossible on the basis of the conditions defining its present. As a consequence, each new stage reconfigured its own past in such a way that it took on the appearance of a necessary step. Mathematics progressed not by an accumulation of results, but by what he described as 'erasure and deepening' (OC 560).[27]

With this emerges a theme central to Serres' work, namely temporal pluralism. The flow of time is not linear, but complex, disordered and sometimes chaotic. We have, says Serres, too often confused time with the measure of time, assuming that it conforms to the single scale we apply to it.[28] This, he writes, reflects the mathematical knowledge of its day; namely geometry. But there is no reason for this still to determine our thinking of time now that mathematics provides other means

for doing so, such as topology. In fact, events that are remote from one another on one scale may be close on another, depending on the pattern of regularities in which they occur and to which they contribute. Relations between conditions and conditioned can fold and take on unexpected forms, and in this way the past may be reconfigured by the present. This is also the case in Foucault's account of discourse, which incorporates a form of feedback, as what is produced becomes in turn a condition, modifying, disturbing or even destroying the patterns of statements in which they occur (AK 141, 164). For as a statement occurs following a regularity established by other antecedent statements, it is most likely to reinforce the regularity. But with the appearance of each new statement, the field of statements to which it is related will be configured a little differently, and at some point this difference may be decisive enough to destabilise the old regularity and give rise to a new one. The field of statements to which the new statement belongs will then exhibit different aetiological pathways, different conditions of coexistence and exclusion.

Foucault takes up this theme again in Part IV, Chapter 6, in a discussion of different forms of history. The first of these, called recurrential analysis, is said to be characteristic of a discipline such as mathematics that is continually reviewing 'the process of its own development', which it transcribes into 'the vocabulary of vicinities, dependencies, subordinations, progressive formalisations, and self-enveloping generalities'. This is a history 'that is constituted by mathematics itself and which mathematics recounts about itself' (AK 209, 247). In this later chapter, however, Foucault goes on to identify two further forms of history, the last of which, archaeological history, appears to be that closest to the analysis of statements and discursive formations. This seems to be at odds with the chapter 'Rarity, Exteriority, Accumulation' where recurrence is presented as a general feature of discourse, and the capacity of statements to revise their own past appears to characterise all of discourse. There may be an ambiguity here, or it may simply be that the three forms of history Foucault identifies later overlap, at least sometimes, or to some extent.

The closing lines of the chapter reiterate that archaeology has no impulse to return to a condition prior to history, to escape its materiality, or to place itself in the 'non-determined dimension of the opening' (surely a reference to Heidegger) (AK 141, 164). Not for the first time, the option of securing the transcendental conditions of the phenomena archaeology analyses is explicitly refused. However, as Foucault has made clear on several occasions, this does not mean that the analysis falls by default into empiricism. It is important to bear this in mind

when Foucault acknowledges that the analysis of statements exhibits a form of positivity, in view of which he is happy to be called a positivist (AK 141, 164–5).

5. THE HISTORICAL A PRIORI AND THE ARCHIVE

This is one of the best-known chapters in *The Archaeology of Knowledge*, and certainly one of the most discussed. Everything significant in the idea of archaeological analysis passes through it. But if the chapter encapsulates the originality of Foucault's approach, it is also the point where its problematic and sometimes puzzling character is most on view. There is some repetition of themes from earlier chapters, but the dense concentration of issues raised, and its central position in the book, mean that it is useful to work carefully through what is presented here.

Picking up where the last chapter left off, Foucault states that the unity of a discourse is characterised by its positivity. This unity 'defines a limited space of communication' in which it becomes possible to say whether or not different texts or authors have addressed the same object, occupied the same subject position, and used the same concepts (AK 142, 166). The relations defining that space are discursive and can be traced regardless of who knew what about whom and when. In this way, authors engage with one another in and through discourses they can neither master nor survey as a whole. As they do so, the 'influence' of argument, logic and the exchange of ideas is supplemented by the form of the positivity that defines the thematic continuities, the translation of concepts, and even the space within which such disputes and engagements can take place. This, writes Foucault, is 'what might be called a *historical a priori*' (AK 143, 167).

Of all Foucault's many terminological innovations in *The Archaeology of Knowledge*, the idea of the historical a priori is the most unusual and the most contentious. The designation 'a priori' implies 'transcendental', and as such stands opposed to history understood as a train of empirical events. So all encompassing has this opposition been in philosophical thought that the idea of a priori conditions that are themselves historical sounds like the worst form of confusion. Yet Foucault's diagnosis in *The Order of Things* of the impasse into which thinking entered in modernity foresaw the need to break down this opposition.[29] The coherence of the idea of the historical a priori is therefore crucial to the effectiveness of his response to this situation. As Foucault described it in *The Order of Things*, the impasse arose as a consequence of the

doubling of the figure of man such that he became at once the condition of knowledge and conditioned by it. This doubling was raised as a concern in the commentary to Part III, Chapter 3, 'The Description of Statements', and was at least provisionally settled by the description of rules as regularities, and by the two-way relation this made possible between the conditions and the conditioned. Now the question is whether the explanation continues to stand up when Foucault introduces the historical a priori. In short, does the idea of the historical a priori do enough to avoid repeating the doubling in a different form.

First, Foucault reminds the reader that the historical a priori serves as a condition of the existence of statements, and more specifically of their coexistence, but does not underpin the legitimacy of any particular assertion. Moreover, while the historical a priori accounts for the simultaneity of statements, it cannot account for their unity, and when describing the pattern in a series of statements, it does not provide a law that makes the future deducible (AK 143, 167). The reason for this is primarily that, as has already become clear, the rules in the historical a priori do not stand above the processes they describe as though in what Foucault calls here an 'unmoving heaven' (AK 144, 168). Neither transcendental nor purely formal, they are not even formal rules 'endowed with a history', which would simply make them like a series of conjectures each of which asserts a universality at odds with its claim to be historical. Instead, the rules reflect regularities that emerge from the processes to which they apply, and as such they are 'caught up in the very things that they connect' (AK 144, 167). The rules embedded in the historical a priori are therefore modified by the very processes to which they apply, making both their own future and that of discourse fundamentally unpredictable. It is for this reason that they are historical. But if they have their own historicity, what is it that distinguishes this from an empirical history? The rules cannot be determined empirically because they do not themselves have the status of things, or of phenomena, and they cannot be abstracted from experience because they are responsible for the construction of that experience. Where patterns of knowledge and forms of speech and conduct build into traditions, or are formalised as a science, the empirical history that unfolds in this way begins with experience, and with the elements of that experience. As such, it neglects the formation of that experience, and the formation even of its elements: enunciative modalities, objects and concepts, but also the further conditions that Foucault describes which lend these a consistent pattern and make meaning possible, such as associated fields. An empirical history has to presuppose the configuration of these things in order to begin the account it gives of events, yet it is in the changes

to this configuration that the historical a priori lies. One might object that there is nothing to prevent old habits of thought and analysis from being shaken up to form new perspectives, with new objects in view, and that what Foucault presents as an invisible condition of experience might become visible (for example, patterns of regularity that only appear when one looks across several disciplines at once). In this way, what at one stage occupied a position in the a priori could fall back into the empirical. In fact, there may not be any reason to deny this from an archaeological perspective. If conditions that currently elude experience because of their role in constructing that experience (that is, their role in the production of statements) were themselves to become objects within experience, then this shift in the discursive formation can be made into a theme of archaeological analysis in its turn. The important point is that not all things can be objects of experience at all times, with the same being true of enunciative modalities (subject positions), concepts and the other elements of discourse; this is why archaeology deals with the conditions of the actual existence of statements.

To say that the conditions presented by Foucault as a priori were in fact simply empirical conditions that had not been brought to light by the appropriate analysis would therefore be to assume that the elements of discourse lay in some neglected spot until such time as they were noticed, spoken about, adopted as concepts, or donned as a new guise for the subject. In turn, this would be to treat discourse as a unified field of possible experience that contains within it what are for archaeology the historical a priori conditions of discursive formations. This would clearly reproduce a conception of experience to which Foucault is deliberately providing at least the promise of an alternative. Of course, wanting to get out of jail does not mean that one has, or that one can, and so the alternative that Foucault provides to the notion of empirical experience has to be convincing.

One aspect of such an alternative would be an account of experience that was not grounded in the unity of a subject; or, to put it another way, an account of the subject that is not itself anchored in a profound psychological or transcendental unity. In fact, Cavaillès, having denied the subject a foundational role in mathematical thought, went on to consider the experience of mathematics in light of the subject's involvement in demonstration and the intuition of new objects using multiple schemas, where the objects and concepts of one stage in its history were excluded as possibilities by the conditions defining earlier stages. This goes part of the way towards showing that experience is not necessarily a unified field, but can undergo radical transformations in the form of what can be seen, done, thought and spoken. Foucault's notion of

enunciative modalities provides a similar account of the subject as belonging within discourse, where it is defined by the specificity of its relations to a discursive formation in all its aspects, including its institutional form. Disrupting the assumed unity of experience lends support to the idea that historical a priori conditions are not simply empirical conditions to which analysis has yet to turn its attention.

As noted earlier, it is important that the relation within discourse between conditions and what is conditioned does not reproduce the figure of man as both the condition and the object of knowledge that in Foucault's view has characterised modernity. In a sense, this can be settled easily, since the relation as Foucault described it in *The Order of Things* spanned the distinction between transcendental and empirical. With the transcendental level out of consideration, a direct reproduction of the problematic structure is already impossible. But the difficulty may prove to be a more stubborn obstacle and on closer examination it resolves into a new problem concerning the relation between conditions and conditioned. This brings time back to centre stage, in the form of the temporal relation between conditions and conditioned as Foucault presents them in the idea of the historical a priori. To establish the nature of this relation, one can begin by considering both the relation between the empirical and the transcendental, and the alternative case of simple empirical determination. The latter is more straightforward and can be explained without too much difficulty: the relation between condition and conditioned within a train of empirical events presupposes, as a minimum, that in any given process the condition come before the conditioned according to a temporal scale established in advance. It assumes, that is, both the temporal priority of condition over conditioned, and the irreversibility of their relation. Turning to the relation between the transcendental and the empirical, the problem with the structure of thought in modernity is that man appears on both sides of the divide. Since the transcendental and the empirical have fundamentally different temporal characteristics, this is either impossible, or else leaves man irreparably divided. However, the factors of priority and irreversibility found in the case of simple empirical conditions can be seen here too, albeit in a different sense by virtue of the absence of a single common temporal dimension: a transcendental condition will always precede the empirical reality it conditions, and it will remain unaffected by empirical events.

One view of the analytic of finitude that Foucault saw as a response to the division of man is that it confronts just this problem. If Heidegger's existential analytic plays a part here, it is precisely in so far as it develops an account of the temporal finitude of existence without taking the

distinction between time and the eternal (or timelessness) as a point of departure. As such, it promises a determination of human finitude on which the account of knowledge could be based without lapsing into the difficulties described. In order for this to be possible, the structure of transcendental philosophy had to be called into question, and a way of understanding the conditions of concrete existence set out that did not repeat the separation of the transcendental. Heidegger's notion of the ontological difference between Being and beings appears to offer just this possibility. According to the ontological difference, Being cannot be treated as a thing, and as a consequence the ontological foundation that philosophy has traditionally sought cannot be defined in terms drawn from the interpretation of things. Rather, Heidegger argues, the Being of a thing lies in the manner in which it is disclosed. Similarly, Being as such cannot be treated as if it existed somehow independently, either literally in a realm apart, or in the sense that its meaning could be determined independently of the relations into which it enters. Being is nothing apart from beings, and nothing apart from their disclosure in and through our engagement with them. As a consequence, the ontological difference does not refer to a new level of existence so much as propose a new perspective on what exists.

There is a case to be made that Foucault takes up the idea of the ontological difference from Heidegger as a way of making sense of the way discourse and its analysis operate in a dimension that is neither transcendental nor empirical. Statements map words onto things, and as such are the conditions for being able to say that an object exists. But in what sense do statements themselves exist? If they were to exist as objects, then archaeology would be reduced to an empirical science, and the question of the ontological conditions of statements would remain in the air (this is essentially the impasse that Foucault described in OT). Yet statements do exist, as Foucault made clear much earlier in *The Archaeology of Knowledge*. Faced with the difficulty of accounting for the existence of statements without treating them as empirical objects, one option is to consider the existence of mathematical objects that are constructed from the operations of mathematics itself. However, the ontological difference also seems to offer an alternative. The relation between discursive objects (or subjects) and discourse itself can be thought of as analogous to the difference between beings and Being. On this basis, discourse exists in a similar sense to the way Being exists (cf. The Description of Statements). The task of archaeology is then to describe the manner of its occurrence, how it presents itself. One does not experience discourse or the statement 'as such', but only as the mapping of word onto thing, the allocation of a subject position,

and the appearance of an associated field. Just as the statement does not exist alongside the proposition and the sentence, so, for Heidegger, Being is disclosed in and through beings, without itself being like them. But to think ontologically requires maintaining the separation of Being and beings, the ontological difference, as well as their relation. Making the translation to the analysis of discourse, critics have argued that Foucault fails to do this, allowing his terms to slide from one side to another: first regulating discourse, then part of it. There may indeed be some terminological inconsistency in this respect, in fact the sheer quantity of terms Foucault introduces makes this hard to avoid, but this is not the point here.

Although Heidegger has opened up a possibility for Foucault, it is also the case that Foucault is adopting a mode of thought quite different to Heidegger's and that there is a limit to his appropriation of the ontological difference. A brief outline of a criticism that Foucault appears to direct against Heidegger will show why, and lead back to the problem of the doubling between the transcendental and the empirical that Foucault identified.

Because Being cannot be treated as a being, Heidegger had to cultivate a new idiom, since ontological language could no longer be representational. This might be considered enough in itself to avoid the doubling between condition and conditioning in question here. However, there is some ambiguity over the extent to which Heidegger's account does in fact manage this. Many of his analyses rely on an ontological appropriation of terms familiar from ontic, or empirical, description; for example, conscience, guilt and resoluteness all feature prominently in the analysis of Dasein, though Heidegger insists that they must be separated from their usual everyday meaning. Above all, the ontological structure of Dasein as a whole is named 'care' and given a temporal interpretation. In this way, not only is care 'rediscovered' as a fundamental determination of Dasein's finitude, but time itself appears twice, in two distinct guises: as everyday 'clock' time and as the original temporality constitutive of Dasein's Being. Their very clear demarcation from one another excludes any simple translation from the empirical, but there is some scope for the kind of suspicion that Foucault raises. What is certain is that for Heidegger the ontological has priority over the ontic and that, as with formal or transcendental grounds, this priority insulates the ontological from any effects leaking back from the ontic level of beings; that is, what it means to be cannot be altered by beings themselves and the events that occur to them. So while the specific question of whether the ontological difference in Heidegger gives rise to a problematic doubling or not may remain open,

the priority and the irreversibility associated with the doubling clearly are present, and it is these which are the chief sources of concern for Foucault.

The issue of priority and irreversibility is far less clear-cut in the case of discourse. Although there is a priority in so far as what appear to be 'higher order' regularities in discourse condition the actual coexistence of individual statements, such conditions are not prior in the sense either of existing in advance or of being situated at another level than that of statements and the relations between them. This is reflected in the fact that they are not conditions for the *possibility* of what is regulated. Moreover, as Foucault writes, the discursive rules are 'caught up in the very things that they connect . . . and are transformed with them' (AK 144, 168). Discourse thereby avoids both the priority of conditions over conditioned and the irreversibility of their relation; the two factors primarily responsible for the problems that Foucault identified for thinking in modernity as a consequence of the distinction between the transcendental and the empirical having such complete dominance. To sum up, the risks associated with the doubling of conditions and conditioned stem from their separation across different levels (e.g., transcendental and empirical), but Foucault's account of discourse avoids this separation while also blocking the reduction of discursive conditions to the level of empirical events. The reading given in Part III, Chapter 3 still holds good, and history, understood in the terms Foucault sets out here, takes over the role previously played by the analysis of experience; that is, it serves as a quasi-analytic based on the mathematical a priori, which is revealed here as fundamentally historical.

Foucault now introduces another key term in the book. The domain of statements, he writes, no longer appears to be a surface, but has become a 'complex volume' occupied by different regions with incompatible rules and practices. All the systems of statements at a given time taken together form what Foucault calls the 'archive' (AK 145, 169). Contrasted, as usual, to anything empirical, such as the sum of all the texts and documents of a culture, the archive is situated between language (the system for constructing possible sentences) and the *corpus* (the collection of all words spoken), acting as 'the *general system of the formation and transformation of statements*' (AK 146, 170). It is 'the first law of what can be said', and governs 'the appearance of statements as unique events' (AK 145, 169). As it does so, it gives discourse structure, differentiating discursive formations from one another. If the historical a priori is the formal designation of the conditions of discourse, the archive is the specific set of conditions for a given discourse, and as such it is what an archaeological analysis actually aims

to describe. However, Foucault concedes that such a description cannot be exhaustive, for reasons that are, he writes, 'obvious' (AK 146, 171). Unlike formal or transcendental conditions of possibility, an archive cannot impose boundaries at which a conditioned discourse must break off. The space and time defined by an archive is open, in the sense that its borders are thresholds of communication with other discourses. Across the discontinuities that separate discourses from one another, the regularities defining the rules of one may be disrupted by events formed elsewhere, giving rise to transformation. Such is the complexity of the space and time in which regularities form that its description cannot be a once and for all affair.

The impossibility of describing the archive as a totality leads to a reflection on the impossibility of describing our own particular archive. Foucault is quite clear that this cannot be done, since 'it is from within these rules that we speak' and they determine the modes of appearance and of accumulation of what we can say, its forms of existence and its historicity (AK 146–7, 171). In a quite traditional way, Foucault initially concedes that these rules can only become clear to us as we acquire a distance from them, but then raises the question of whether or not it should be possible for analysis to 'map out the place where it speaks' and to set out its own conditions (AK 147, 172). This suggestion, and the doubt that follows immediately after it, appear to rehearse two recognisable positions within philosophy. The first, that one can only understand one's own time as it recedes into the past; the second, that a rational inquiry can successfully trace its own limits and the condition of its own finitude. It is tempting to associate these positions with Hegel and Kant respectively. Yet the second position cannot be directly attributed to Kant, since the possibilities for which it seeks conditions can be defined 'only in the moment of their realization'. They are conditions of actual existence, not of possibility. This prompts the question: if it is conditions of actual existence that are sought, then should not the analysis 'approach as close as possible to the positivity that governs it and the archive that governs it today to speak of the archive in general?' (AK 147, 172). If the analysis cannot illuminate what makes it possible to speak of the conditions of the time it is analysing, then it has a blind spot and remains planted in a finitude it cannot describe. However, Foucault turns what could have been seen as a weakness into a positive feature of archaeological analysis. What such analysis can illuminate lies close to us, he writes, but it cannot bring to light 'the enunciative field of which it is itself a part'. This region, close to us, but not ours, acquires a certain privilege in so far as it borders, and thereby delimits, our own archive. As such, 'its threshold of existence is established by

the discontinuity of what separates us from what we can no longer say, and from that which lies outside our own discursive practice' (AK 147, 172). It seems that we can learn something of our own archive after all, by attending to the borders marked by what lies around it. But there is only so much that we can learn from this, since these borders can tell us little about what lies within them, except that it is different to what lies further afield. If there are limits to what we can know about the content of our archive by demonstrating what has now become other to us, the analysis of the archive also 'dissipates that temporal identity in which we are pleased to look at ourselves when we wish to exorcise the discontinuities of history' (AK 147, 172). In this way, we are thrown into a present that is fractured, complex, and about which we can know something, but not everything. In the end we can be certain only that it is not determined by the rules of discourse that shaped even its near past (or the various forms that its past may take according to the discursive formations in question); and if this means our identity is dispersed, it also encourages an analysis of the archive that contributes to the transformation of the discursive formations in which we exist. In this, one can see the outline of a practice of freedom that Foucault would elaborate some years later.

Part IV: Archaeological Description

1. ARCHAEOLOGY AND THE HISTORY OF IDEAS

Foucault writes that his aim has been to develop a method that is 'neither formalizing nor interpretative' (AK 151, 177). In steering a path between structuralism and hermeneutics, he is implicitly following the programme for historical analysis that Serres proposed in 1961.[30] But he is gripped by the doubt that the weighty apparatus he has put in place has served only to conceal that the form of analysis he proposes in fact remains within the framework of the history of ideas. Having set out the archaeological method, its terms and structures, Foucault therefore turns to consider what it means for the way historical analysis is actually conducted. In doing so, his overriding concern is to distinguish archaeology from the history of ideas.

A history of ideas can take several forms and for this reason it is not easy to pin down. Foucault identifies two principal characteristics. First, it hands over the history of the developed sciences to specialist studies and takes as its focus the margins that have either contributed in one way or another to science, or else which never gained the authority of other branches of study and faded from view: the history of alchemy, of phrenology, or of newspapers, the history 'of opinions rather than of knowledge' (AK 153, 179). Second, it charts the boundaries between existing disciplines and the exchanges that have taken place across them, and it records the rise and fall of disciplines, the emergence and disappearance of themes. Putting these characteristics together, the history of ideas describes the transition to philosophy, science, or literature (or whatever it may be) from what is then presented as a primitive stage to be left behind. However, rather than treating this as a sharp (epistemological) break, in a manner reminiscent of Bachelard, the history of ideas analyses the 'silent births, [and] distant correspond-

ences' that contribute to the emergence of the discipline in question (AK 154, 181). Although there appear to be certain guiding principles that archaeology shares with the history of ideas, the general orientation of such a history is, writes Foucault, towards genesis, continuity and totalisation. It is a form of description for which Foucault declares our own time no longer suited. He then proposes to identify four key 'points of divergence' between archaeology and the history of ideas: the attribution of innovation, the analysis of contradictions, comparative descriptions, and the mapping of transformations (AK 155, 181). These are the themes of the following four chapters. First, in the remainder of this chapter, Foucault outlines four principles that characterise the archaeological method.

First, archaeology does not look for what discourse reveals or conceals, but simply examines discourse itself. This amounts to a repetition of the already familiar point that archaeology is not concerned with hidden meanings, and is not a hermeneutic practice of any kind. This sets archaeology apart from what is known as the 'hermeneutics of suspicion' associated broadly with the modes of analysis found in Marx, Nietzsche and Freud. There is no truth concealed behind the surface of discourse, and archaeology 'refuses to be "allegorical"' (AK 155, 182).

The second feature of archaeology mentioned by Foucault is also familiar, but is raised here in a way that draws to the fore an issue that will have to be addressed in relation to a later chapter. Foucault writes that archaeology does not trace the transition between discourses as a continuous series of 'insensible' steps on a 'gentle slope' (AK 155, 182), which is a way of saying that archaeology does not treat change as continuous. Accordingly, it also sets aside the idea that discourses can be seen to develop a potential, reach a stage of fulfilment and then decline. Instead, it defines discourses 'in their specificity', showing how the rules by which they operate are 'irreducible' to those of any other (AK 155, 182), effectively meaning that transformation is discontinuous, taking place in step changes. It is in this sense a 'differential analysis of the modalities of discourse' (AK 156, 182). Yet if the effort of archaeology is bent on marking discourse off from what lies close to it, and on demonstrating the irreducibility of each formation to anything else, it appears to deny itself the language in which to speak of change. If each discourse is differentiated from every other by its very specificity, then there is a risk that history may be reduced to a collection of frozen tableaux (this issue will be addressed directly in the chapter 'Change and Transformations')

In contrast to the history of ideas, as Foucault describes it, archaeology does not regard creativity as the expression of the spontaneous

freedom of the subject, and therefore does not aim to identify the point at which the creativity of an individual gives rise to a new cultural form. The rules for discursive practices that it traces may characterise only part of the larger cultural forms that the history of philosophy describes, but they may also run through more than one such form and thereby establish larger-scale patterns of regularity in the discursive universe.

Finally, archaeology does not try to recover an origin, and especially not the origin of a cultural form at the point at which it passes from the spontaneous but inner freedom of an individual to the wider social sphere. It is, writes Foucault, 'nothing more than a rewriting; that is, in the preserved form of exteriority a regulated transformation of what has already been written' (AK 156, 183). These lines may appear enigmatic at first, and it is not clear in what sense archaeology is a 're-writing' of what has already been written. Perhaps the first thing to remember is that archaeology does not aim to recover something concealed within discourse, thereby making discourse say something that it had refrained from saying before. In so far as discourse is a network of relations between statements and groups of statements, archaeology simply describes what it finds. However, if archaeology is a 're-writing', this means that it is not an objective analysis that leaves its topic untouched. Archaeology describes regularities in the relations between statements and groups of statements, and this description is already a translation from one code into another, and as such already a transformation. Moreover, as Foucault has made clear before, archaeological analysis is itself subject to forms of regularity and its description of discourse is not therefore a detached observation. Even in its fidelity to discourse, an archaeological analysis is a new event that may interfere with the patterns of regularity shaping the discourse it describes.

2. THE ORIGINAL AND THE REGULAR

Foucault deals here with the first of the four 'points of divergence' between archaeology and the history of ideas that he mentioned in the previous chapter. At stake is the way that historical analysis deals with the emergence of what is new, which then leads to a consideration of what counts as 'new' and how it is recognised. The history of ideas, writes Foucault, operates with two basic schemas. The first identifies what is rare and without precedent, while the second builds blocks, groups and traditions that tie discourses into the past. In practice, the two schemas overlay one another as the history of ideas traces both the inertia of the old discourse and the conditions under which the new

was able to emerge. However, Foucault's point is that this approach understands the emergence of new forms in terms of originality, and this in turn presents two basic problems. The first is that it presupposes a smooth continuity with which what is 'original' effects a break. Closer examination of such a continuity will, however, reveal discrepancies, discontinuities and relations that might otherwise have been passed over. The second problem is that this way of viewing events first places them in relation to one another according to time, and then asks whether they represent a continuation of what came before or a break. As such, the history of ideas assumes that discourse takes its place, and changes, within a temporal dimension that is continuous, and that underlies discourse as its condition of possibility. By contrast, time features in archaeology as an immanent property of a discourse, arising from the forms of relation by virtue of which it coheres internally, and by which it is linked to its own iterations, and ultimately to events at its borders and beyond. As such, archaeology is characterised by temporal pluralism.

A familiar epistemological problem arises here. As the resemblance between the works of one author and another, or between different vocabularies, is 'an effect of the discursive field in which it is mapped' (AK 160, 187), continuity can only be established by working from within a discourse, and not from a discourse-independent position. This threatens to make it impossible for archaeology to do what it sets out to do, because it cannot establish a 'discourse neutral' position from which to chart the contours and discontinuities of discursive formations. As mentioned earlier, this is essentially the difficulty encountered in the philosophy of science by those, such as Kuhn, who regard theories as grounded in a set of practices that are specific to each, and which therefore do not provide the basis for a comparison between theories. There is then no currency for evaluating one against another. As for Foucault, so for Kuhn, discontinuity appears to deprive the historian of the category of progress. However, whereas Kuhn's descriptions of theories are elaborated from within, leaving the periods of revolution between paradigms beyond the reach of a description that could be identified as 'rational' in any privileged sense, Foucault seems to grant archaeology the ability to see both a given discursive formation and the discontinuities that distinguish it from other formations. The charge here would be that archaeology is attributed a view from on high at odds with its insistence on discontinuity and dispersion.

Clearly, there is no option of moving to a meta-level discourse to achieve this view (at least not definitively). With this ruled out, there seem to be two alternatives. The first is to concede that all archaeological

analyses are provisional and relative; in which case their value is hard to establish on strict epistemological grounds, and one is likely to fall back on criteria of interest and utility. For each analysis or description, one would then have to ask: why is this useful or interesting and what other analyses and descriptions can be given? There is, however, a serious weakness to this 'pragmatic' alternative, in so far as evaluations based on interest and utility come down to the subject, which is thereby reintroduced as a fundamental category for historical analysis. This cannot be what Foucault intended, and, more importantly, would make the not inconsiderable weight of critical apparatus that he has assembled so far in this book all but redundant.

The alternative is, at least initially, unproblematic. The difficulty for the history of ideas arises because it is committed to a form of history that can be called 'empirical' in so far as it deals with unities as existing things, and aims to trace when a new object has arisen, or when a new concept with which to present reality has appeared, and so on. In each case, however, it practises a form of history that is in one way or another divided into the thematic material that is addressed, and some other element that is necessary for the historical account, but with which it cannot deal. This may happen in a variety of ways. For example, empirical history may rely on formal or even transcendental conditions for the possibility of experience, where such conditions necessarily lie beyond the reach of historical discourse itself; if the conditions are made historical, then there may be still be laws determining the shape of historical development that do not themselves become the objects of historical description. In a quite different sense, the reconstruction of the history of science as a tale of the reason homing in on the truth, or even simply increasing the predictive power of theories, will often hand over to sociology or psychology those episodes for which it cannot compose an account of continuous rational debate. In each case, the history of ideas is pushed into giving an incomplete account by virtue of the demarcation it draws between the rational and the historical. But this is precisely the kind of demarcation that archaeology breaks down to reveal networks of overlapping relations. Its focus on regularities, not things, means that the order described by archaeology is not that of empirical events and the forms of unity on which the history of ideas relies. The regularities in question are, as has been well established by now, those between statements, groups of statements, and non-discursive events, and their analysis works on a case-by-case basis to determine where new statements arise on the basis of transformations in the regularities that serve as the condition of their existence. For the most part, breaks are not emphatic; even

where a break is deemed sufficient to warrant speaking of a discontinuity between discursive formations, there will be several regularities at play in any example, and some of them will meet with more disruption than others, as Foucault will observe at the end of this chapter. Moreover, some of the regularities will extend beyond the borders of a given discursive formation, tying it in partial and often hidden ways to other discourses, either contemporary or historically remote. The significance of this here is that it gives archaeology more to describe and new relations to map. In this sense, discontinuity between discursive formations does not mean that archaeology is reduced to silence about the relations between them. In fact, the 'gaps' between the borders of discursive formations, along with the borders of the discursive formations themselves, are the richest materials for archaeological analysis. 'Discontinuity' here does not entail a kind of void, where analysis must cease and which it cannot cross. Instead, closer analysis is generally rewarded with more material on which to bring the analysis to bear.

One can see here the extent to which history is an intrinsic part of Foucault's thought, and not merely a topic he addresses. Incommensurability is a problem that arises for a philosophy in so far as it is committed to providing a purely rational account, or discovering purely rational grounds. For such a philosophy, history will always be an unwelcome companion, and often a profoundly obstructive one. By contrast, Foucault willingly supplements description with further description, increasing the dimensions in which regularities may form from the line to the table and beyond without this undermining the accomplishment of his basic aim. Because archaeological description does not aim to establish originality, the initial appearance of a sentence is not ranked higher than its repetition years, or centuries, later. Instead, their proximity reflects a similarity in the rule of their formation, which may be the same rule; that is, the regularity that gives rise to the existence of each may be the same regularity. The fact that it is constituted over a scale quite distinct from the usual chronological order may simply mean that their discursive proximity is not broken down by time and the intervention of other events. However, it also throws light on the fact that events which initially appear to interrupt or stand outside the prevailing order are not necessarily by that token 'irregular'. They may be part of a regularity that spans a different scale or different variables. But even where this is hard to establish, one is dealing with different kinds and degrees of regularity, not with 'irregularity', as this would imply that certain events were 'rule based' and others somehow not (AK 161, 189). For archaeology there cannot be

any one regularity that takes precedence as of right over others and no regularity is absolute.

Foucault sees this form of analysis opening up in directions that have yet to be properly explored. The first concerns what might be called lateral or diagonal relations between different discursive regularities. Taking linguistic analogy, logical identity and enunciative homogeneity as three possible forms of relation between discursive groups, Foucault pits the third (which characterises archaeology) against the first and second, suggesting that what appears unrelated according to linguistic analogy and logical identity may in fact be differentiated in terms of enunciative homogeneity; conversely, what appears to be translatable or equivalent according to linguistic analogy and logical identity may in fact display remarkable enunciative homogeneity. In a situation where 'Enunciative homogeneities (and heterogeneities) intersect with linguistic continuities (and changes), with logical identities (and differences), without any of them proceeding at the same pace or necessarily affecting one another' (AK 163, 191), the field of archaeological analysis is complex and may reveal surprising affiliations and hybrids.

The second direction of research opened up by this conception of archaeology concerns what Foucault calls 'interior hierarchies within enunciative regularities' (AK 163, 191). That it bears a certain similarity to phenomenological description means that what differentiates it stands out all the more clearly. First of all, Foucault notes that no statement is ever the simple reproduction of an original; not because statements conform to the logic of the simulacrum, but rather because, as Foucault puts it, the enunciative field 'never sleeps': each statement puts into operation a set of rules that run through different formulations, and which therefore cannot be presented synthetically in a single formulation or extrapolated from a single statement. As a consequence, each statement actively contributes to the formation of the rules that set up the space of coexistence in which they themselves occur. This basis in the rule as regularity needs to be borne in mind when Foucault acknowledges that certain groups of statements deploy the rules in their 'most general and widely applicable form' (AK 163, 192). This makes it possible to see how other less general objects, concepts, enunciative modalities and strategies are formed. The idea that objects and concepts can be described as specific kinds of more general objects and concepts, culminating in the 'most general', recalls other forms of classificatory discourses, and perhaps especially the phenomenological conception of formal ontology and formal apophantics (though this pertains to judgements rather than concepts directly). The connection appears to be strengthened by Foucault's suggestion that archaeology will identify

the governing statements that concern the most general possibilities of characterisation and that define 'observable structures and the field of possible objects' (AK 164, 192). However, the description of rules as regularities means that this can only be a limited similarity. If the rules that run across different formulations cannot themselves be given in a single formulation, then archaeology cannot in principle achieve the fundamental status that Husserl attributed to formal ontology and formal logic; and if each statement contributes to the rule that governs its own existence, then the rules are themselves neither fixed, nor stages on the way to a final destination. Indeed, as archaeology follows the 'derivation' of each successive degree of specificity, it leads to new discoveries, conceptual transformations, and the emergence of new ideas. Archaeology is oriented to open-ended transformation. Furthermore, the stages of this transformation 'must not be confused with a deduction that is made on the basis of axioms', nor understood as the unfolding of a general idea, or as a movement that has its genesis in the psychology of the subject (AK 164, 193). In short, the field that archaeology analyses is not defined in its possibilities by the initial point from which it is derived; an observation that follows directly from the fact that statements contribute to the regularities that they put into operation, which means that even the 'most general' rules to which an archaeological derivation can return must itself have antecedent conditions and there can literally be no 'first principle' or necessary point of departure. Where, as may happen, it appears that archaeology reproduces other forms of analysis, Foucault would have us remember that the orders and homogeneities it uncovers are only ever partial, provisional, and already, if imperceptibly, in transformation.

The chapter closes with Foucault reflecting back on a common criticism that had been levelled at *The Order of Things*; namely, that its division of history into periods was too crude and encouraged a selective reading of events. As noted above, in what Foucault refers to here as the 'confused unities' we call historical periods, there will be different stages and paces of development associated with elements such as concepts, theories, levels of formalisation and linguistic development, each with their own 'temporal articulation' (AK 165, 194). Whether Foucault is correcting a misunderstanding of *The Order of Things* or correcting a misleading tendency in his own analyses is a question for another time. What is clear is that for archaeology as Foucault understands it in this text neat historical divisions are a consequence of taking up a viewpoint at a distance, where closer inspection will reveal threads of continuity and frayed ends that turn the borders of such periods into complex spaces.

3. CONTRADICTIONS

In the previous chapter, Foucault wrote that departures from regularity do not lapse into simple irregularity, but rather enter into variations of regularity. This theme is taken up again in the present chapter, as Foucault considers the way the rationality of a critical or analytical method is revealed by its approach to contradiction, the kind of contradiction it recognises, and its response. The answer to these questions says a good deal about what archaeology takes to be 'rational' and how it embodies this sense of rationality. Given that Foucault has taken such trouble to suspend credence in the forms of unity around which the coherence of a method is organised, there appears to be a risk that its relentless pursuit of difference and divergence within discursive formations may deprive archaeology itself of sense, even as it unmasks the careless assumptions of other forms of historical discourse.

Given that unity has always been the hallmark of reason, contradiction and opposition challenge the state of rationality at a given time: either the conception of rationality is mistaken, or there is an error or illusion that has to be overcome in order to heal the rift and recover unity. But if, as in archaeology, unity is neither a first principle nor an aim, if contradiction is treated as an intrinsic characteristic of discourse and not as a 'fall' or error, then does its toleration put the coherence of archaeology at risk? Is archaeology itself a rational form of analysis? These questions bear not only on the basis of archaeological analysis, but also on what it hopes to achieve in and through that practice. Responding to them thus opens onto the question of the 'value' of archaeology as such, and how such a consideration can be addressed. In other words, why should one prefer archaeology over other forms of analysis? One might think here of genealogy, in both its Nietzschean and (later) Foucaultian forms, for which differences are pursued back to points of emergence without resolving into a single origin. Such an approach leaves open the genealogical challenge of discriminating between 'active' and 'reactive' tendencies. For Nietzsche, the 'value' of genealogy can, for argument's sake, be estimated according to its contribution to an ideal of health, and the form of life that its practice encourages. But there is no easy way to tie Foucault's critical practice into any similar basis for evaluation. This makes it all the more important to make the connection between archaeology and the new sense of critique that he proposes in *The Order of Things* – one based on the 'mathematical a priori' and on the idea of temporal dispersion.[31] If there is a prevailing value here, it is that of experimentation, and the possibility of transforming the conditions of existence. Another way of putting this is to say that history

always has the last word for Foucault, and that any philosophical truth will always be submitted both to the work of history, carried out through the very relations that establish even those truths that appear to lend form and structure to the work itself, and which in this sense may include the kind of archaeological analyses that Foucault proposes. Yet it must be a modified sense of history in so far as it begins to take over roles that were once those of philosophy. Neither practice will remain unchanged by the developments Foucault sees, and which he then promotes.

As in earlier chapters, Foucault marks out the profile of archaeology through a series of contrasts. The history of ideas tends to attribute to the discourse it analyses a basic coherence, thereby implying that any irregularities it discovers are merely provisional and can be resolved, usually by detecting a deeper or more extensive principle of cohesion that sustains the unity of the discourse in spite of the now superficial irregularity (AK 166, 195). The heuristic principle is therefore bound within a circular practice that aims to restore a cohesion that it assumes was there at the beginning. To achieve this, it may characterise the source of the contradiction as 'external', rather as political dissent is often blamed on foreign agitators; in this case the foreign agents may be psychological weakness on the part of practitioners of the discourse, or the social conditions in which it occurs. It may be attributed to the incursion of the unconscious, or the interruption of ideal meaning by the material sign. Another common gesture is to disqualify a recalcitrant text by identifying it as part of an author's juvenilia, or as a careless expression that detracts from a deeper intention. While moves of this kind may appear to be simple and rather reductive, the rich variety of forms that coherence can take is such that the history of ideas is never short of subject matter. At the end of such an analysis, the contradiction will have been made to disappear. Alternatively, it may be revealed as itself the principle on which the unity of a discourse is based, as in psychoanalysis and Marxism. In the first case, discourse is the 'ideal figure' that rises above the empirical source of contradiction; in the second, discourse is the 'empirical figure' whose apparent cohesion has to be exposed to reveal a fundamental contradiction that discourse has concealed. Although proceeding in opposite directions, what these approaches share, notes Foucault, is their occupation of a space defined by concealing and revealing contradiction, by its appearance and disappearance. By contrast, archaeology does not try to do anything with contradictions, which are treated simply as 'objects to be described for themselves' (AK 169, 198). Referring to the example of Linnaeus's 'fixist principle', Foucault notes that it was opposed

by a series of evolutionist proposals in the works of Bufon, Diderot, Bordeu, Maillet and others, but that archaeology does not try reveal a more fundamental set of shared theses underlying the opposition, or to characterise the opposition as the mark of a more general conflict running through 'all eighteenth century knowledge and thought' (AK 169, 198–9). The archaeological strategy is to show that the two theses share a common locus in a description of species and genera organised around the visible structure of organs. This move does not resolve the contradiction, but neither does it 'transfer it to a more fundamental level' (AK 170, 199). It simply identifies the point at which the contradiction occurs and describes the structure and extent of the separation between the two theses in terms of the elements of archaeological analysis that Foucault has set out.

As elsewhere, one can see Foucault describing the elements of discourse simply as they occur, or as they present themselves, and therefore not taking an element as an example of a general kind; here, it is contradiction that is in each case to be described 'in its own terms' and not as a particular instance of the general category. To this end, Foucault breaks down the general category of contradiction into contradictions of type, level and function (a division that must itself be provisional). Archaeology takes little interest in contradictions between different propositions that arise from the same discursive formation, according to the same conditions, or those that enter into opposition with one another while arising from distinct discursive formations (e.g., Linnaeus's fixism and Darwin's evolutionism, which belong to natural history and biology respectively). Contradictions of these kinds are visible to more orthodox forms of history. By contrast, archaeology looks for contradictions that arise within a discursive formation and that, on closer inspection, reveal divisions that had not been evident previously. These, Foucault explains, will not reflect different views of the same object, or different usages of the same concept. The archaeological focus is on the way statements are formed, which means that attention falls on the patterns of regularity that order the enunciative function and strategy, the relation of concepts to objects, and all the relations into which statements enter in giving consistency to discursive formations. Such contradictions will be complex and 'distributed over different levels of the discursive formation' (AK 171, 201), thereby providing archaeology with a starting point for further analysis. To illustrate this, Foucault describes the contradiction in the eighteenth century between systematic natural history and methodical natural history, which turn out to have involved different objects, enunciative modalities and concepts and to have pursued different theoretical options. Taking a longer

view, these contradictions can be seen to have had different functions in a discursive practice: in some cases, they will have been obstacles to overcome, in others a starting point from which to proceed, while in other cases again they may have prompted a new development, or the reorganisation of the discursive field. As Foucault writes, their effects are too various to describe simply in terms of the acceleration or deceleration of history. Time, he adds, 'is not introduced into the truth and ideality of discourse on the basis of the empty, general form of opposition' (AK 172, 202). This is to say, discourse is not essentially timeless, its historical character representing a modification that, viewed in the proper way, reveals a moving image of its true timelessness. Moreover, the temporality of discourse is not derived from a general and all-encompassing structure to which events must conform. Just as the regularities constitutive of the rules shaping discursive formations emerge from the relations between the elements of discourse themselves, so too do the patterns of difference on the basis of which temporal discriminations are made; that is, the category of 'opposition' or 'contradiction' emerges from more specific forms of relation which archaeology aims to bring to light. The variety of forms of contradiction therefore support different temporal forms, which may overlie one another and intersect, or just run parallel, and which together make up the temporal pluralism of discourse. This way of viewing time is directly related to the idea of temporal dispersion that Foucault drew from his reading of Kant's *Anthropology*, where synthetic activity is ongoing, local and provisional.

Finally, it is important to see that if Foucault identifies several forms of contradiction, operating at different levels and exercising different functions, closer attention to any one of these may reveal further discontinuity. Archaeology must allow that this is possible, and that the forms Foucault discusses here are simply those which his analyses have revealed so far; there is no assurance that they exhaust the field of all possible forms of contradiction, or that they may not be eclipsed by other forms of contradiction that have remained out of sight so far. The reflexivity by which the form and elements identified by Foucault may themselves be transformed by the processes to which they give order is fundamental to the coherence of archaeology as a method. The impetus of archaeology is to push past apparent unities and points of origin to reveal disparity and dispersal, and this applies equally to the eventual problematisation of its own terms.

4. THE COMPARATIVE FACTS

This is the last of the chapters in which Foucault deals with how archaeology differs from existing approaches to history. However, as in the previous cases, it is more than just an exercise in mopping up misunderstandings, and archaeology is brought into sharper focus, especially in its relation to epistemology, Marxism and structuralism.

Unlike orthodox epistemology, archaeology is concerned not with the internal structure of a theory *per se*, but with the differences between the various elements a theory deploys and those deployed by other theories and to other ends. As Foucault underlines here, its aim is not to determine the meaning of basic terms within a theory, to define its objects, to set out the forms of inference appropriate to it, or to establish the conditions of epistemic justification associated with a given theory or science. Although closer to the 'historical epistemology' of Brunschvicg, Bachelard and Canguilhem, archaeology is distinguished by its emphasis on dispersion, and by its incorporation of dispersion into the historicity of knowledge at each level. In this respect, it is closer to the methodology developed by Serres in the series of *Hermes* books that takes as its model the way mathematics incorporated epistemology into its own practice, its development as a discipline being driven by the problematisation of its own practice (a principle central to Cavaillès' conception of mathematics), and the translation of this methodology into philosophy and other discourses. Archaeology follows suit in recognising that the rules which govern a discourse, and the changes that shape it, are formed within the discourse itself. A further and perhaps more far-reaching difference between Foucault's archaeology and epistemology is that archaeology is concerned not just with a given discourse in its strict sense, but also with 'a set of events, practices, and political decisions, a sequence of economic processes that also include demographic fluctuations' and many other 'non-discursive' elements that feed into discourse in its wider sense (AK 174, 205). In this way, knowledge is not simply embedded in practices that represent its historical conditions or possible applications. Rather, knowledge and the events, practices, decisions and processes associated with it have a significant degree of formal equivalence and make up a single network, albeit one that is internally differentiated and without well-defined boundaries. It is easy to see how archaeology thereby has something in common with pragmatism, and indeed with other forms of 'naturalised' epistemology that in one way or another break with the idea that knowledge is regulated by well-defined rational principles. However, to place knowledge on the same plane as social events and

the communication through which it is decided what 'counts' is not the same as developing a conception of discourse in which they are thoroughly integrated. For its part, in so far as it draws legitimacy from the unity of a particular discipline, the naturalisation of epistemology on the basis of psychology, neuroscience, evolutionary biology, or indeed any other region of discourse, might be the starting point for an archaeological enquiry, but cannot be the basis on which such an enquiry rests. For this to be possible, a region of discourse would have to serve as a general principle for the intelligibility of the rest, which would reintroduce the continuity that Foucault set out to remove from the analysis of discourse in the first place. The remainder of this chapter is a review of, and a warning against, the ways in which this might happen.

Foucault begins by claiming that the comparison in *The Order of Things* of General Grammar, the Analysis of Wealth and Natural History in the Classical period was not aimed at recovering forms of rationality that extended throughout the period. For archaeology, there is no easy passage between the particular and the general, the local and the global, and such an extension would probably have been unwarranted. So the characterisation given of the Classical period was never intended to be exhaustive, and by implication the same could also be said for the other periods studied. Although the relations between discursive formations, such as General Grammar, the Analysis of Wealth and Natural History in the Classical period, do not 'spill over into adjacent domains', the fact that they are not a total description of the period inevitably means that other discursive formations may not conform to the same pattern and may therefore not begin and end at the same borders. As noted before, these borders will look more like the result of messy negotiations rather than clean incisions. This is reflected in Foucault's response to the imagined criticism that in place of General Grammar, Natural History and the Analysis of Wealth he might have discussed cosmology, physiology or biblical exegesis, as though he had privileged certain discourses above others, covertly or for no good reason. Foucault not only concedes that his analysis is limited in this respect, but insists that he made it so quite deliberately (AK 176, 208). Had it been otherwise, he points out, he would merely have added to the already long line of attempts to characterise the 'spirit' of a given time. Any omission or imprecision would then throw his whole account into question. Instead, archaeology is presented as a method, in much the same way as phenomenology is a method, its possibility higher than its actual form at any moment, with scope always remaining for further analyses and greater refinement.

Taking as its subject matter 'a tangle of interpositivities whose limits

and points of intersection cannot be fixed in a single operation' (AK 177, 208–9), archaeology commits itself to a series of comparative analyses with no expectation of arriving at a final 'correct' version. Indeed, its aim is to have a 'diversifying' effect. Ultimately, this emphasis on the transformability of the subject area will circle back to take in the methodology itself, so that its terms and perhaps even the key distinctions that provide a framework for it may themselves mutate. The fact that archaeology may be caught up in the processes it analyses inevitably prompts the doubt that it is not fundamental, and that it must rest on some more permanent basis or set of principles. But such criticism assumes that a credible methodology will necessarily be both fixed and independent of the processes or events with which it deals; in other words, it assumes an ideal of objectivity to which archaeology does not subscribe, and whose construction would be just the kind of event for which it sought to provide a historical analysis. Moreover, it is not alone in being a methodology that is responsive to the domain in which it is applied, as the same could be said of phenomenology, hermeneutics and even pragmatism. The cases are not all equivalent, however. Phenomenology has been adapted and refined at least in part as a result of the analyses it has undertaken, but the changes have aimed at securing fuller and more adequate access to the phenomena it has been studying. In this sense, it has been refined in response to them, but it has not been directly affected by them. Hermeneutics is a slightly different case As Gianni Vattimo describes it, hermeneutics is historically situated in modernity as the best interpretation of the history that has led to the point at which the interpretation is made. It is therefore planted in a two-way relation, interpreting the meaning of the conditions that led to its own emergence. This means that hermeneutics is itself an interpretation, and not a basic truth about interpretation. Something similar is the case for archaeology, except that its relation to its own conditions is closer to a material process than to an interpretative process. For Foucault, discourse is a complex configuration of relations in which events feed back into their conditions and it is ultimately impossible to insulate a level of analysis from what it describes. In short, the principles of archaeology are be implicated in the history it analyses and archaeology must therefore be prepared to problematise its own appearance, structure and development. Pragmatism may be said to do something similar by virtue of its refusal to anchor its own legitimacy in a meta level of any kind, but only in so far as it is prepared to let criteria such as utility and consensus themselves be called into question.

Foucault writes that, in analysing General Grammar, Natural History

and the Analysis of Wealth in the seventeenth and eighteenth centuries, he could have looked for the implicit postulates they shared in spite of their differences, and could have speculated on the lines of communication between them. However, this would have involved tracing the translation of general principles from one domain to another (e.g., from botany to the analysis of the origin of languages); but such an analysis would, he writes, have relied on the idea of influence, which takes for granted the existence of some kind of unified form as its currency. By contrast, archaeology proposes to uncover the conditions that make such exchanges possible, which ultimately lie in the laws of their communication and exchange (AK 177, 209). Setting out in detail what this might involve, Foucault identifies five distinct tasks. Interestingly, these involve analyses whose aims cannot be resolved into a single clear point of view: different discursive elements may be based on similar rules, which may or may not be applied in the same way; different concepts may occupy a similar position in their respective positivities, even though they be quite different in their domains of application, degrees of formalisation, and historical genesis; a single notion may cover two quite distinct elements; and finally hierarchical relations between discourses may be established (AK 178–9, 209–11). Where a step towards simplification occurs, it is countered by a move towards dispersal, thereby ensuring that unities are not allowed to consolidate to the point where they begin to appear immune to change.

The two most commonly cited points of contrast between Foucault's archaeology and his later genealogical method are that genealogy widens the perspective of analysis beyond discourse to include non-discursive events, and that in doing so it allows a more developed sense of historical change. In each case, the changes are less clear-cut than they may initially appear and may come down to shifts in emphasis rather than wholesale changes. The first point has been discussed already, but Foucault addresses it directly here and it is worth pausing to take in what he is saying. Archaeology, he states explicitly, describes relations not just between discourses, but also between discourses and institutions, political events and economic practices (AK 179–80, 212). In doing so, it does not attribute explanatory force to a causal process either moving from the discursive to the non-discursive or vice versa; archaeology sanctions neither the dominance of discursive formations over empirical and cultural history, nor the power of empirical events alone to determine the structure and development of thought. Foucault's refusal to treat discourse as separate from the reality it constructs, either in principle or in practice, means that it is inextricably bound up with non-discursive events. The example he gives is of the relation between

medical discourse and political practice, which is more complex than a relation of cause and effect pointing in either direction (AK 181, 213). Although Foucault modified his methodology, and in fact did so repeatedly, the idea that taking such events into consideration required a radical shift from archaeology to genealogy is misplaced. However, one can perhaps see here an ambiguity that prompted a revision. It was already clear back in Chapter 1 that the relations between discourse and non-discursive events played a significant role in the formation of regularities (AK 32, 41), and discourse is presented here as so closely bound up with non-discursive events that the relations seem to be a part of discourse itself. At the end of this chapter, Foucault encapsulates the difficulty when he writes that the autonomy of discourse does not entail its ideality or its historical independence. But how can a discourse be autonomous without being historically independent? What Foucault has in view here is any notion of historical independence that follows from the ideality of discourse, leaving open the possibility of a form of autonomy compatible with history and the complexity of historical relations. Once again, Cavaillès is a significant precursor here, thanks to his account of mathematics as an autonomous formal discipline that is essentially historical. However, given the implication of discourse with non-discursive events (and their institutional form), it is still not clear how one could draw a line between discourse and non-discourse without straying dangerously close to making precisely the kind of distinction between formal conditions and empirical events that archaeology tries to avoid. Allowing this already blurred distinction to fade away altogether is a factor in the shift from archaeology to genealogy.

The second point, that archaeology cannot account adequately for historical change, is related to the first, in that one will look for the account of such change to emerge from the constructive processes through which discourse and non-discursive together take on the form that they do. It is a question, then, of the extent to which the account of discursive formations and their temporal dispersion in fact provide a convincing story of the transformations that belong to them, or allow such a story to be told.

5. CHANGE AND TRANSFORMATIONS

In Part IV, Chapter 3, Foucault showed how the general categories of contradiction, opposition and negation conceal patterns of complex relations that lie within them, and in this chapter he sets out to make a similar point with respect to the category of change. In place of 'the empty abstract notion' of change, archaeology aims to reveal a plural-

ity of transformations involving different elements of discourse. His point is essentially that discourse is complex, and the transformations that occur cannot be encompassed in a single form without concealing their true variety. Given that Foucault's book aims to promote a new methodology for historical analysis, this is clearly an important question. However, *The Archaeology of Knowledge* is also part of Foucault's alternative to what he regarded as the failed strategy of an analytic of finitude, which sought to ground knowledge in philosophical anthropology centred on human finitude. In his Introduction to Kant's *Anthropology*, Foucault alludes to an approach based on temporal dispersion, rather than the original unity of temporality proposed by Heidegger, but this sketch is given more detail in *The Archaeology of Knowledge*, and nowhere more so than in this chapter. The replacement of a single category of change with multiple senses of transformation is therefore especially important, as it lies at the heart of Foucault's response to the phenomenological, and above all Heideggerian, emphasis on the fundamental unity of time as the mark of human finitude and as the condition for ontology. However, the move Foucault makes here has its problems. First, simply to call all the events in question 'transformations' appears in itself to assume an identity or form that they have in common; if so, is this not a candidate to replace the 'empty category of change'? By discarding the idea of change as such, does archaeology not then foreclose an engagement with its own conditions, much as regional ontologies fail, in Heidegger's view, to ask the more fundamental question of Being? Yet if Foucault is right and there is no such general category of change, will the sense of transformation itself not splinter into confusion? Whether the general concept of change is deliberately ignored, or simply does not exist, there is a risk that archaeology may be unable to account adequately for the transformations it describes. Of course, much will depend on the sense one attaches to the idea of an 'adequate' account, but I'll come back to this shortly.

If the questions I have just outlined all hang in the air in this chapter, Foucault's declared purpose is to counter the perception that archaeology freezes history into a series of tableau, immobilising the thought whose movement it aims to release from the constraints of a conception of history based on continuity. From this perspective, discourse would be separated from any law of development and 'established in a discontinuous atemporality' (AK 184, 217); that is, time would disappear and the analysis of discourse would be structural, and therefore primarily spatial. For all its apparent neutrality, there are at least two accusations implicit in this criticism. First, the phenomenological response to Kant that passes from Husserl through Heidegger made time absolutely

central to its interpretation. Above all, time was seen as crucial for re-awakening philosophy to ontological questions. Failing to accommodate time places the possibility of providing an ontology in doubt, and if one understands epistemology as essentially a founded discourse, then this amounts to leaving the job half done. In addition, it seemed odd, or worse, that Foucault should construct a method for historical analysis in which time played little or no part. The idea that time is sacrificed and archaeology is a spatial form of analysis is a familiar one, but, as this chapter shows, it is not accurate. All that is sacrificed here has in fact already been sacrificed much earlier in the book; namely, the idea of continuity as an underlying condition of ontology, and of discourse. For one of the things we learn from this chapter is that continuity as such is less the issue than certain ontological assumptions that are made when continuity becomes a guiding principle. So, although the opposition to continuity in Part II Chapter 1, and the emphasis given to the idea of discontinuity more or less throughout, may encourage an expectation that continuity will be resisted in all its forms, this is not actually the case. In this chapter, Foucault sets out a view of plural transformations in which continuity and discontinuity both feature.

The chapter begins with Foucault acknowledging the objection that archaeology appears to ignore temporal relations within discursive formations in order to focus attention on the transitions between them, yet these transitions paradoxically have the character of blank atemporal jumps as 'one sudden formulation replaces another' (AK 184, 217). To this extent, it appears as though archaeology deliberately neglects change within discourses in order to focus on changes between them, only then to find these changes themselves hidden from view. However, Foucault clearly thinks the objection is misconceived, in so far as it treats archaeology's attention to limits as the expression of a desire to establish clear demarcations between discourses, whereas in fact the analyses Foucault offers repeatedly take what appears to be a simple limit and reveal it to be made up of a series of displacements that do not exactly coincide. Moreover, the objection takes the archaeological commitment to discontinuity seriously enough not to situate distinct discourses within the same temporal dimension, and then takes this separation as proof that there can be no temporal relation between them – but this simply assumes that temporal relations can only occur within a pre-established continuous dimension. In short, the objection assumes that a transformation can only appear when its beginning and its end are marked in a single dimension, and when the path from one to the other passes through a (potentially infinite) series of intermediary points. Of course, Foucault does not accept this view. Yet, as he

points out, the alternative need not entail trying to establish a different rule in every single statement, as discourse would then be hopelessly fragmented and an account of transformation would again be impossible. Pitching his account somewhere between these two extremes suggests that continuity will remain important for archaeology, though its role cannot be that of a fundamental condition underlying a single dimension of change and time. In this way, Foucault moves away from the idea of a single dimension of change that lends itself to a universal history, and – more importantly – would allow the issue of the ground of knowledge to be raised all over again. More specifically, he is exploring an alternative to Heidegger's proposal that Kant's anthropology could only be redeemed by placing it on the basis of a fundamental account of temporality as the condition of the finitude of Dasein. But for this to work, Foucault needs at least to hold open the possibility of an account of change and time that is not grounded in the unifying condition of continuity. Such an account can be found in Bachelard's temporal atomism, though Foucault does not follow him precisely. So while Foucault has gestured in this direction before with the idea of temporal dispersion (see the Introduction), this chapter presents an opportunity to flesh out the idea.

After some preliminary remarks concerning the variety of ways in which statements may be related to events, Foucault notes that archaeology recognises rules of formation with different levels of generality; that is, the range of a discourse, or its extension, is determined not by the number of examples matching the defining form, but rather by the more ambiguous notion of a territory whose borders are less evident. Every discourse is local, in the sense that it constitutes a number of cases, statements and events within a neighbourhood that is discursive but also historical. Some discourses stretch to include more than others, but none has any claim to universality. This leads to a situation in which the extension of a discourse has two dimensions, reaching out across a range of events and relations that are synchronic, or 'temporally neutral', and across time to include events and relations 'that imply a particular temporal direction' (AK 186, 219). The archive is made up of a mixture of logical and chronological relations, as some that are necessarily successive intersect with others that are not. In this way, Foucault refuses to allow discourse to be divided into the simply logical (or formal) and the simply historical, which is to say that the formal conditions of discourse are themselves historical. As a consequence, one does not have to decide whether priority lies with atemporal formal conditions or with the contingent events of empirical history carried along by temporal succession.

This ties in directly with the fact that the events archaeology describes are not what we usually recognise as empirical events, but rather shifts in the pattern of relations between the various elements within discourses; for example, between statements, between objects, types of enunciation and concepts, and ultimately between the rules of formation that arise from regularities emerging between these elements. These regularities establish rules of formation that ramify into branches with different temporal characteristics. But as regularities they all necessarily extend beyond individual statements, objects, enunciative functions or concepts. They can be found 'in statements or groups of statements in widely separated periods' (AK 184, 217), meaning that archaeology does not group events together according to their proximity on a predetermined historical or temporal scale; rather, it destroys the 'synchrony of breaks' between discourses, which means that where there are several transformations underway contemporaneously, each 'may have its own particular index of temporal "viscosity"' (AK 193, 229) and one cannot assume that they will coincide. The events that archaeology describes do not fall into a neat temporal order and are not, as Foucault puts it, lined up 'immediately below one another' (AK 189, 223).

By describing complex patterns of relations both within certain levels of discourse and between them, archaeology tries to tear away the surface of change as such to reveal the 'system of transformations' that constitute it (AK 191, 225). As Foucault notes, this is only possible once archaeology breaks with two models that have dominated thought for a long time. First, the linear model according to which events are arranged in a strict order of succession, a model that Foucault associates with patterns of speech and writing, but which also belongs together with cause and effect; and second, the model of a stream of consciousness whose openness to the future and retention of the past mean that it can never coincide with itself in the present. As Foucault writes, discourse is neither a consciousness externalised in language, nor language endowed with a speaking subject (AK 187, 220–1). Treating discourse in this way, Foucault takes up Cavaillès' call for a turn away from the philosophy of the subject to a philosophy of the concept, and repeats in a different setting his approach to the historicity of mathematics as distinct and autonomous, independent of consciousness and of any other historical discipline, including logic and natural science. For Cavaillès, the history of mathematics was the ground of its own scientific status. For Foucault, the laws governing discourse are formed along the path of its own development. They are immanent to discourse as a practice 'with its own forms of sequence and succession'

(AK 187, 221). The discourses in question are both autonomous, but the significance of this is very different in the two cases. For Cavaillès, the autonomy of mathematics is the condition of its necessity. By contrast, Foucault regards the autonomy of a discourse as an invitation to explore its relations to other discourses, other layers of discourse, and other non-discursive formations, such as institutions, social and political relations and so forth.[32]

At this point, the objection that Foucault's archaeology sacrifices time for space, and therefore cannot account for historical change, slips into sharper focus. It runs like this. To account for the transformation between two discursive formations one needs to demonstrate its necessity, and to do this one must arrive at a point where it is self-evident. One could appeal to an external principle of some kind, and explain the transformation as caused by economic conditions, or social policy, but this would assume the causal efficacy of events external to the system in question, and Foucault refuses to explain things in this way. Alternatively, one could simply present the steps that lead from one pattern of regularity to another, but this would only constitute an explanation if the steps themselves were in some sense self-evident; as one does not know in advance which events can linked by cause and effect, and as there is no underlying 'logic of change', this is impossible. Therefore simply increasing the level of detail in the description will not in and of itself explain the necessity of moving from one step to the next. Even if there are configurations that appear to occupy intermediary positions, they will be at the margins of any single pattern of regularity, and therefore will not themselves carry the force of a rule. One is left, then, with a proliferating number of snapshots of a transformation, but no way of presenting the transition from one to another.[33]

This objection suggests that however much Foucault banks on describing in ever greater detail the emergence of categories commonly taken to be the currency of historical interpretation, he nonetheless has to assume the occurrence of some kind of process from which the regularities described by archaeology first emerge. In other words, when Foucault sets out to describe the historical specificity of a given discursive formation (its unique temporal vector), in so far as this historical specificity emerges with the regularities the discursive formation in question displays, there must already have been some still unnamed process unfolding such that any change at all could occur and fall into the pattern which then constitutes the historical specificity that archaeology describes. In short, so the objection goes, Foucault simply cannot ignore the general category of change, which must underlie his account of transformation whether he chooses to engage with it or not.

However, it is not hard to see that this misunderstands what Foucault is proposing with the idea of archaeology. Above all, the objection assumes that 'to account' for a transformation means to demonstrate its necessity in some way. In fact, archaeological description can never reach a point where the step that follows is revealed as 'self-evident', mainly because it can never reach the point where descriptive possibilities have been entirely exhausted. As Foucault said elsewhere, the topics he studied could be taken up again in a different way. Even the rules that shape the existence of a certain discursive practice must themselves have emerged from a process, which may in turn be examined more closely or in a different way. Archaeological description is in this sense infinite, even as it is bounded by the discourses it elects to study.[34]

The transformations that archaeology addresses involve reconfigurations in the rules or regularities embedded in discursive formations. How, then, does one regularity become a different regularity? Again, there can be no single answer. There are so many ways for a discursive formation to be disrupted by another that they are irreducible to a single mechanism. Equally, it may be that a discourse undergoes a form of internal collapse, as the regularity by which it has been sustained breaks down. In whichever way it occurs, the outcome will be the disruption of one pattern and the emergence of another. Describing how this happens, Foucault writes that he has sought to show 'the very form of the passage from one state to another',[35] which means the specific form taken by each transformation, even though such a demonstration could never be exhaustive, and the form itself never absolutely precise. But if there is no appeal to continuity as a general principle, neither should emphasis be placed too heavily on discontinuity, and transformations will exhibit both. Given that a statement already comprises a set of repeatable relations, this has to be the case. One of the aims of archaeology, therefore, is to show that the continuous and the discontinuous are 'formed in accordance with the same conditions' (AK 193, 225), which means that neither is given priority over the other, and neither is simply derivative. Instead, they both rely on the formation of patterns of regularity.

Serres describes time as a pure multiplicity, as a patchwork or mosaic, and as a threshold between disorder and redundancy: in one direction lies a chaotic absence of structure, and in the other an absolutely fixed set of relations; but time is a sporadic, local and ultimately variable order established between the elements in question.[36] Where degrees of repetition occur, one has continuity, but this, too, is sporadic, local and variable. Discontinuity is found between such patterns of regularity, and is the condition of a temporal pluralism. From this perspective, the

idea that Foucault has somehow sacrificed time in order to elucidate the spatial architecture of discourse appears hopelessly wide of the mark, as what fascinates him most is precisely this middle ground where order can be described, but never grounded, where it undergoes transformation without conforming to a more fundamental rule than the one that has shaped its existence so far. Archaeological analysis describes the construction of knowledge and experience that takes place in a historical process, but does so through a specific form of repetition, and not by a taking up a viewpoint from which to map the whole. This may sound surprising, given the confidence with which Foucault will sometimes state the essential characteristics of a period, or the characteristics that have changed in the transition from one to another. However, his descriptions are always local, and always situated. What distinguishes them from being a simple repetition of the history they describe is that they address the rules by which historical construction takes place, and the transformation of these rules. As he writes in the concluding paragraph of this chapter, to name a period in history, such as the Classical age, is not to invoke a principle of unity, but to call up 'a tangle of continuities and discontinuities' (AK 195, 230–1). To analyse the way such a period ends and gives way to another is to trace a complex group of relations and events, forming a variety of regularities that do not all coincide and may not all be consistent with one another. The operation of time within discourse will be brought to light as one conducts this archaeological analysis, without itself becoming a theme.

It might be objected that by refusing to deal with time directly, Foucault allows time to operate secretly as the transcendental condition for the processes that are analysed. But such an objection assumes in advance that there is a single form of time that underlies all transformations, which is a view Foucault explicitly rejects. To speak of local discursive temporalities is not to accept a watered-down version in which variations on a fundamental model are described while the model itself is left unanalysed. Instead, time does not precede the formation of regularity in discourse. To analyse such a formation is to reveal the rules by which temporal order itself is composed.

6. SCIENCE AND KNOWLEDGE

The final chapter before the conclusion is already involved in a certain 'taking stock', stepping back, as it were, to look over what has been accomplished. As in the previous chapter, Foucault is responding to misunderstandings of his work, and this time the issue centres on what it is that archaeology actually describes. Medicine, psychiatry,

economics and linguistics, the topics he had addressed in his published work prior to *The Archaeology of Knowledge*, do not belong to the so-called 'precise sciences'. Yet he also ignored literary, philosophical and political texts – all long considered appropriate subjects for careful academic analysis. His choices appear contrary. If, as seems to be the case, Foucault selected his topics at least in part because of their problematic relation to orthodox or established science, then the question arises as to the precise nature of this relation.

Almost as a preliminary to engaging this question, Foucault clears the ground by sidelining two of the more obvious responses. Is it the case, he asks, that what archaeology describes are not sciences, but pseudo-sciences? Unsurprisingly, the answer is no. Using the more neutral term 'discipline' for those 'groups of statements' that borrow from science without being strictly scientific, he clarifies that disciplines do not coincide with positivities and discursive formations, which are the real topic of archaeological analysis. For example, the analysis of psychiatry took as its focus a network of relations supporting the production of statements not only in the discipline of psychiatry, but also in legal texts, philosophy and literature, and in practices relating to hospitalisation, internment and social exclusion. A discursive practice may even operate when there is no recognisable discipline at all. In such cases it might be thought that the discursive practice defines a science in the making, but Foucault rejects the implication that archaeology selects its subject matter on the basis of a narrative of development. For example, natural history was not an anticipation of biology, and contained much that was excluded by the later science. Also ruled out by Foucault here is the possibility that positivities and science are mutually exclusive, existing alongside one another without entering into a meaningful relation.

Under the heading of 'Knowledge (savoir)', Foucault once again situates archaeology with respect to conceptions of knowledge whose understanding of the landscape is defined by the distinction between the empirical and the transcendental. Archaeology identifies the rules in accordance with which a discursive practice relates objects, enunciations, concepts and so forth, but this does not yield 'a defined structure of ideality' (AK 200, 237). Accordingly, neither are the elements of a discursive practice to be treated as a heterogeneous group linked only by the lived experience of the subject, from which ideal structures may be distilled. Rather than look for the precondition of ideality in lived experience, Foucault proposes that one look for the precondition of discourse in what has been said. The axis that runs from consciousness through knowledge to science is thereby replaced by another which runs from discourse to knowledge to science. As Foucault points out,

this is not to exclude the subject from discourse and from archaeological analysis, but merely to recognise that it does not play a central role 'either as a transcendental activity or as empirical consciousness' (AK 202, 239).

Science insists that in order to fall within its domain, what is said has to be appropriately constructed. Yet, as Foucault points out, there may be affirmations that have the same meaning and that are equally as true, but which are not constructed as science demands. For example Diderot's *Le Rêve d'Alembert* contains much that is entirely continuous with the natural history of its day without itself belonging to science; or, as Serres demonstrates, the novels of Émile Zola articulate the principles of thermodynamics, yet there is no danger of them being lost to literature. However, archaeology imposes no such restriction, and would treat the work of Diderot and Zola as part of discursive formations that reached across the orthodox disciplinary boundaries in their respective periods. The idea that similar patterns may be found in discourses that on the surface have little relation beyond being historically contemporaneous, and sometimes not even that, suggests that Foucault's archaeological method is borrowing from structuralism, but this may only be true to certain extent. Serres' early writing expressed a great enthusiasm for what structuralism could become, but as his work developed into an exploration of the mobility of formal characteristics, and the difference that accompanied repeated iterations of a model, so he ceased to refer to structuralism and to link his own thinking to it. In spite of the admiration Foucault often expressed for Althusser's work, there's a case for saying that his thinking is more closely aligned to that of Serres in this respect.

Having established that the territory of archaeological analysis is more extensive than science, Foucault acknowledges that two lines of questioning have opened up. First, what is the place science occupies within this territory? Second, by what process or processes does a science emerge within the territory of archaeological analysis? Responding to the first of these questions, Foucault adheres to the principle of avoiding general patterns of explanation, observing that sciences will play different roles in different discursive formations. However, the conclusion he draws is significant. Knowledge, he writes, is not a terrain that science is programmed to colonise; and conversely science is not compromised by its proximity to knowledge that remains outside its limits. This second point indicates that Foucault is taking his distance from Bachelard's idea of an epistemological break between science and the forms of knowledge that preceded it and which may continue to exist alongside it, something that is confirmed later in the

chapter.[37] In archaeology, discontinuity is deployed to disrupt unities and to complicate the apparent simplicity of their limits, rather than to establish new unities and new limits. However, this should not be taken as a sign of a wholesale departure from Bachelard, for while his analysis of science does not find its way into Foucault's archaeology, other aspects of Bachelard's work do, most notably his constructivism and his account of temporal pluralism.

Having outlined a complex dimension of continuity and discontinuity between science and knowledge, Foucault then situates the question of ideology within it. However, in view of the way the function of ideology is described it is hard to see exactly what purpose its introduction plays here besides that of allowing Foucault to clarify his relation to Althusser and Marxism. For while several Althusserian ideas reappear only slightly modified in Foucault, there is a divergence over the conception of truth and the role of science in its construction and dissemination. Although Althusser does not treat science and ideology as exclusive of one another, he does regard science as the clarification of concepts that have a wider currency such that their reapplication at least in part eliminates their initial errors and obscurity. Devoting more attention to the complex relations between science and knowledge, Foucault places less emphasis on the corrective capacity of science. Instead, ideology occupies the space between science and knowledge; since science and knowledge are not related only at their borders, ideology occurs in the dynamic, multiple and reciprocal relations between them, or in the wider discursive practice in which science is lodged. Although for Foucault, as for Althusser, science constructs truth, archaeological analysis tracks the multiple relations, both discontinuous and continuous, that define its connection to other discursive practices and its separation from them. If in general (and therefore inaccurately) ideology occupies a kind of middle ground between the scientific and the non-scientific, it does not and need not feature in Foucault's work simply because that dimension consumes the attention of archaeological analysis almost entirely.

Foucault breaks down the general space of knowledge and science into regions separated by four thresholds. First, the threshold of positivity, at which a discourse achieves an individuality by virtue of a single system for the production of statements. Second, the threshold of epistemologisation, beyond which a group of statements claims to validate norms of verification and coherence, and begins to exercise dominance over other groups. Third, the threshold of scientificity, at which the formation begins to obey formal rules for the production of propositions. And finally, the threshold of formalisation, at the point

where the discourse in question can define its axiomatic base, the elements it uses, and the transformations it accepts (AK 206, 244). This last threshold marks the pinnacle of scientific order, and takes the mathematical sciences as its model. That mathematics so completely defines what it means to be scientific is at least in part due to the degree of formalisation (or the capacity for it) that it exhibited from the beginning. By crossing all four thresholds simultaneously, mathematics leaped to being a fully accomplished science from a standing start, whereas most other sciences change more slowly. For this reason, mathematics is atypical and a bad model for the historian of science (AK 208, 247). What appear to be almost teleological stages in the development of science may instead be treated as different localities within the space marked out by the thresholds Foucault describes. As Serres writes, such a systematic space in fact makes possible a variety of temporal lines of development; human knowledge does not move as a single block over each threshold in turn, and different sciences progress at different speeds. What Foucault calls the thresholds of positivity and epistemologisation may be crossed in quick succession, or even simultaneously, by one science, whereas another may cross the first stage and then linger for many decades or even centuries before new transformations occur that carry it over the second. This possibility is reflected in Foucault's identification of three historical approaches to the dimension as a whole.

The first is pitched at the level of formalisation, and is characterised as the kind of history that mathematics tells about itself. Referring explicitly to Serres' account of the way mathematics took over the role of its own epistemology by writing and re-writing its own history, incorporating and transforming its past as it does so, Foucault describes the way mathematics incorporates and transforms its past in a recurrential analysis (AK 209, 245–6: see p. 24 and note 26 on Serres and Bachelard). The second form of history examines the way knowledge crosses the threshold of scientificity, making regions of experience scientific; for example, how concepts are purified of metaphor and the contents of the imagination. Bachelard is the figure most clearly associated with this form of history, which Foucault describes as trying to show how science is established against a 'pre-scientific level' that both prepares the way for science and stands as an obstacle to be overcome. The reader is then clearly invited to see archaeology as the third form of history, which aims to reveal 'discursive practices in so far as they give rise to a corpus of knowledge, in so far as they assume the status and role of a science' (AK 210, 249). Foucault situates this form of history at the threshold of epistemologisation, but its scope seems to

be defined differently to that of the first two forms. Whereas the first history is addressed uniquely to formalised sciences, and the second to the transition from knowledge to science understood as an expulsion of the non-scientific, archaeology is not confined to a particular region of the map that Foucault defined with the four thresholds. In spite of being situated at the threshold of epistemologisation, it deals with discursive practices that become bodies of knowledge, and that become science, and even that achieve the transition to formalisation. As such, archaeology does not deal with just one stage in the process, but with a level that remains operative throughout the various transformations that a discourse may undergo, and most especially those which carry it across the second, third and fourth thresholds. It finds the discursive practice within science, and tracks the modifications that such a practice undergoes, for example, as a science crosses the threshold of formalisation.

But if, as I have argued, archaeology itself is shaped by the work of Cavaillès and Serres on mathematics, why is Serres mentioned only in relation to the first form of history, and mathematics associated with this history alone? In *Hermes I: la communication*, Serres deals at length with the history and epistemology of mathematics, and Foucault refers to this material both explicitly and implicitly in *The Archaeology of Knowledge*. The Introduction and Chapter 1 of *Hermes I* make it clear that Serres saw in mathematics the model of a structuralism that permeated the whole of culture, but which would be distinct from that practised by Lévi-Strauss. Serres' approach is to treat science as intrinsically historical, and to reveal its historicity as multiple, made up of distinct patterns of relations (both continuous and discontinuous) and directions of travel, which in turn reveal a multiplicity of temporalities. Taken together, these make up a '*pan-historicity*' that is the true condition for a more orthodox account of the idealities of science and mathematics in which history features only as a progression towards greater clarity and formalisation.[38] The 'anhistoricity' of systematic science is revealed 'not as the absence of time, but as the fusion of all possible times' (HI 94). Recognising this opens up new possibilities for the historical analyses of knowledge and science.

Serres describes mathematics as a theory that is externally closed and internally open. By external closure, he means that mathematics is not dependent on other sciences, that it has incorporated epistemological problems and their solution into the body of its own practice, and that it has eliminated intuition, by which it had previously been tied back into the subject. As such, mathematics appears very much like the autonomous formal discipline described by Cavaillès (and to some

extent by many philosophers of mathematics in the twentieth century). That mathematics is internally open is said by Serres to mean that it is characterised by a recurrential history, going back to its beginnings as much as moving towards a point of fulfilment, that it separates itself off from other practices gradually, and is not constituted in advance, and finally that it discovers and clarifies its rules and its principles as it goes along. To make the distinction at all of course depends on there being a simple contrast to make between mathematics and other discourses or disciplines. At the level to which Serres is referring, this seems to be self-evident, even granted the additional complexity he wishes to introduce into the history of mathematics. However, when we turn to Foucault, the picture is a little different. What Foucault is addressing is not the history of a formal discipline such as mathematics, but rather the history of the formal conditions that underlie the various forms of knowledge and nascent science that he studies. At this level, to say that there is a clear demarcation between one set of formal conditions and another would be to assume that each science was constituted independently in advance, which is the very opposite of Foucault's intention. It therefore no longer makes sense to distinguish between the external and internal historical characteristics of a discourse: at the level of the historical and formal conditions of discourse, the historical a priori, there is no external/internal distinction. One can then say that Serres' description of the purity of mathematics denotes the fact that discourse is all there is to describe; that is, it becomes the archaeological analogue of the way that for phenomenology all phenomena are immanent to consciousness, except that now language as it is actually produced (in statements) is distributed in concrete relations with other statements, groups of statements and non-discursive events. This re-location of the conditions for the production of meaning allows the temporal form by which the elements are assembled to open up, revealing multiple temporalities; and these, no longer planted deep in the subject, can in turn be analysed by the historical techniques Foucault describes, and which he groups together under the heading archaeology.

In the closing pages of section (e) of this chapter, Foucault discusses the idea of the episteme that he had used in *The Order of Things*. Given how central a role it played in that study, published only three years earlier, it may be surprising that it makes an appearance only at this late stage. *The Order of Things* was structured around a threefold division of history into renaissance, classical and modern periods, defined not chronologically, but by the epistemes that were the structural conditions of being scientific. Foucault's presentation had attracted a great deal of criticism for being a crude, not to say artificial, division

of history, and in these few pages he clearly wishes to set right what he regards as a misunderstanding.

Continuing a theme already well-established in this book, his primary concern is to counter the impression that epistemes are fixed structures with clearly defined boundaries. As described here, the episteme comprises: the system of relations uniting a discursive practice that gives rise to an epistemological figure, science or formal system; how the transitions across the thresholds described above occur, the distribution of these thresholds and their relation to one another; and the 'lateral relations' between epistemological figures and sciences that belong to neighbouring discursive practices (AK 211, 250). The fact that the episteme comprises the distribution of thresholds implies that these thresholds are not fixed, and that it is one of the tasks of archaeology to determine their relation to one another. For this reason, among many others, archaeology cannot be reduced to an orthodox epistemological reflection that aims to establish the 'correct' criteria that a discourse must satisfy in order to qualify as knowledge or science. For the description of the episteme 'opens up an inexhaustible field', from which there emerges a 'constantly moving set of articulations, shifts, and coincidences that are established, only to give rise to others' (AK 211, 250). In so far as archaeology does not sift through this confusion to find the conditions of the legitimacy of a given science or epistemological figure, it does not return to the 'critical question' (AK 212, 251). Instead, it accepts the existence of a science as a fact, and then asks what it is for this particular science to be a science. Archaeology therefore has an ontological dimension: it asks how a given science exists as a science, which is not the same as asking how it satisfies the criteria to qualify as a science. On the one hand, archaeology must address the rules by which discourses operate, and in particular how they achieve their status as sciences, and to this extent it appears to be pitched at a meta-level with respect to particular sciences. But on the other hand, the rules in question emerge from existing discursive practices, and are modified by their continuation. For this reason, the description of the rules governing discourse are not independent of the description of the discourses themselves (at the archaeological level of statements, their elements, and the relations between them). So while archaeology focuses on individual sciences, rather than the general question of what it means be a science, its attention moves from the sciences themselves to the conditions by virtue of which they exist as sciences at all. As it does so, archaeology discovers not the simplicity or unity of an origin, but the complexity of the historical relations that constitute discursive formations. The general question of what it means to exist as a science

is eclipsed by the specific question of what it means for a specific science to exist under specific conditions. Rather, it is dissolved entirely, such that there is no longer a general question of what it means for a science to exist, any more than there is a general category of change underlying the multiplicity of transformations that discourses undergo.

This point is carried forward into the final section of the chapter, and therefore of the book as a whole, apart from the Conclusion. Under the heading of 'Other Archaeologies', Foucault asks whether archaeology is necessarily directed towards sciences, or whether other bodies of knowledge could be analysed, and picks out the archaeological description of sexuality as a possibility. Such an analysis would reveal how ways of speaking are invested in systems of prohibitions and values, and would therefore be carried out in the direction of the ethical (AK 213, 252–3). The suggestion is of course familiar to us from the work that Foucault did indeed go on to do, and which clearly puts to use a great deal of what he sets out here in this book. Other possibilities involve work on painting and politics. An assimilation of mathematics into philosophy, the opening of discontinuous (plural) dimensions of history, and the displacement of the figure of man have therefore made new forms of inquiry possible.

Part V: Conclusion

The Conclusion to the book takes the form of a series of responses by Foucault to objections that he could anticipate, and no doubt some which had already been made. In the main he takes the (staged) opportunity to step back and provide a more strategic view of what he aimed to achieve, to reiterate a few key points, and to try one last time to head off misinterpretations.

Foucault makes the point that suspending the category of the subject in no way suppresses individuality beneath a universal form of discourse, not least because the forms of discourse that he introduces into the analysis are not universal. To be universal, they would have to be imposed on discourse from the outside and immune to any alteration, but this is not the case. Not only are the particular configurations into which all the elements of discursive formations fall local and provisional, but these elements themselves are descriptions of discourse as Foucault finds it. Although the scale of a historical transformation leading to the disappearance of one or more of what seem in this analysis to be fundamental categories would have to be much greater than those considered here, there is nothing to prevent it, and this point is underlined later in the Conclusion. In fact, the suspension of the category of the subject is a strategic decision made to align the analysis with the disappearance of man, and thereby with the current of thought that promises an escape from the impasse described at the end of *The Order of Things*. It is not, therefore, made out of a bias towards objectivity. If there are thus powerful strategic reasons for Foucault to move in this direction, it is work in the history and epistemology of mathematics and the mathematical sciences, and that of Bachelard and Serres in particular, that clears the way. At the heart of this question is the issue of history and in particular of Foucault's rejection of 'a uniform model of temporalization' (AK 221, 261). Time is the key to the finitude man

that is at stake in the transformations in the structure of knowledge that Foucault has been describing. If man is to disappear, releasing knowledge from the hold exerted by the distinction between eschatology and positivism, and everything that comes with it, then the unity of time has to give way. Since the unity of time is secured by the subject, the subject must be suspended. Far from committing individuals to an anonymous formalism, or anything of the kind, this in fact makes possible the reconfiguration of experience, and even the modification of its ontological conditions. Foucault reminds the reader here of the importance of suspending 'the general, empty category of change in order to reveal transformations at different levels' (AK 221, 261). These are transformations in the structure of discourses (and of knowledge), and as such they also modify the position and function of the subject in relation to those discourses, leading to a more radical sense of freedom. This is not yet a fully fledged account of the freedom of the subject to engage in practices that reconfigure the conditions of its existence, but it is an important step in that direction and the ground is prepared here for the accounts of freedom that Foucault would go on to give in later works.

The next objection in the series appears to be two rolled into one. First, the imagined interlocutor refuses to accept that scientific discourses can be analysed adequately without securing their rationality in a teleological principle and the promise of eventual truth and clarity. Second, it is objected that even if one suspends any discussion of the speaking subject itself, the simple fact of speaking a given language means that one inevitably has a blind spot, since one cannot turn the analysis back on the forms of discourse that made it possible. In fact, the two objections are linked, in so far as the blind spot to which the second refers is, the objector hopes, to be brought back into view by the kind of history to which the first refers. But the argument is circular, since the existence of the blind spot in the first place assumes the sense of reason and history intended to restore unity and transparency. As Foucault explains in his response, his intention was to analyse history in a way that could resist all attempts by teleological reason to restore such unity and transparency. For this reason, the history of thought cannot stand above the forms of discourse it describes, as though it had a vantage point from which to survey the course of their development and to identify its law. Here, Foucault makes a simple and powerful point. If one is prepared to concede that a piece of empirical research can challenge 'the transcendental dimension' then one has accepted almost everything he proposes. For all the sophistication with which Foucault elaborates his account, his basic position is one that refuses a messy compromise: either the transcendental dimension always has

priority over the order it conditions, or it is implicated in the order it conditions; what he resists at all costs is the idea that the transcendental dimension may be historical in a sense that can still be contained by reason and thereby recover some form of patched-up unity. Once the decision is made that the transcendental dimension is implicated in the order it conditions, the difficulty is to establish the nature of their relation and of its historicity, and it is this problem that *The Archaeology of Knowledge* addresses. Its originality lies in its attempt to present this historicity as irreducible to either the transcendental or the empirical. The series of displacements and misunderstandings that Foucault lists on pages 224 and 225 all fail to take this into account, and thereby all reproduce in various ways the framework of knowledge in modernity that Foucault analysed in *The Order of Things*, and to which archaeology is intended to provide an alternative. It needs to be underlined here that in making this point Foucault shows that he does not exempt the entire apparatus that he has introduced in this book from the kind of historical transformations it describes. The concepts of associated fields, surfaces of emergence, grids of specification, fields of coexistence, and even those of statement, enunciative function, concept and object, may all eventually be caught up in the history for which, here, they have emerged as the most fitting description.

But the question is not settled yet. The next objection addresses head on this issue of the level at which archaeology is pitched. It insists that either archaeology is an empirical analysis, in which case it will fall prey to the naivety of all positivisms, or that it is more than an empirical analysis, in which case the objector claims that 'it will enter our game, and, in turn, extend the very dimension that it is trying to free itself from' (AK 226, 267). The challenge is summed up in the question of whether the discourses to which Foucault refers are history or philosophy. Foucault acknowledges that this question causes him some embarrassment. He writes that he would have preferred to leave the question in suspense because the discourse he has sought to develop, contrary to usual academic (and especially philosophical) practice, has not tried to determine the ground on which it is based. In fact, Foucault declares that his discourse has tried to avoid such a ground. Reading this, one might wonder whether it amounts to avoiding the question of whether his discourse could determine the ground on which it is based, should it choose to do so. However, Foucault's comments here are a reminder of how radical a change he is proposing to the usual conceptions of the analysis of discourse. Its task, he writes, 'is to *make* differences' (AK 226, 268). This a striking suggestion in itself, but is it consistent with what he has actually described in the course of the

book? Has he not claimed to be describing the differences passed over or concealed by other forms of analysis, interpretation and history? Has the descriptive act become an intervention? Not exactly, for Foucault goes on to say here that its purpose is to diagnose, and in this respect its differentiations are still descriptive. However, the point has been made repeatedly that successive discursive events can modify the series in which they appear, which means that they can modify the regularity that determined their existence. In addition, as outlined on pp. 24–5 above, Serres describes how the epistemology of mathematics, having been assimilated by mathematics itself, performs both descriptive and normative functions (HI 46–7). The benign confusion between description and transformation implied by Foucault's comments places him beyond the reach of the objection to which he is responding here, which assumes a more orthodox arrangement between the branches and functions of inquiry.

It all depends on the kind of history being conducted. For a history of empirical events is essentially descriptive, and at most can require a revision in the way events are understood, but the description of the rules by which discourses are formed is already an engagement in their own history. As Cavaillès insists, to analyse a history one has to follow it from within, and not survey it from above; Bachelard, Cavaillès and Serres have all described the way mathematics develops by revising its own past; and Foucault accepts that there is a feedback loop from discursive events to their conditions. There are therefore at least two reasons why Foucault can state quite freely that his discourse avoids determining its own ground. First, as he made clear much earlier, archaeology cannot fully determine its own archive. Second, to seek to determine its own ground in the way the objection urges would be to abandon its principles; and before criticising archaeology for an irresponsible lack of seriousness in its refusal to determine its own grounds, the objector should bear in mind that Foucault is following the precedent set by the mathematical sciences. Here, as Cavaillès demonstrates more fully than anyone, the ground simply is the historical movement itself, which generates its own necessity without recourse to external principles. The importance of this point for Foucault can hardly be overstated. However, at the same time, Foucault's vision of discourse as open and complex, as a place where any pretence to necessity can always be unmasked, is far removed from anything that could by supported by Cavaillès and is much closer to Serres' conception of different constellations of knowledge, each with their own local rules and form of organisation. At the end of his response to this objection, Foucault remarks that what he is doing cannot in any way be regarded

as either philosophy or history (AK 227, 268). This is true, as long as one accepts an orthodox picture of each. However, in a manner consistent with the principles he has described, Foucault's account of the archaeological structure of discourse has already contributed to the transformation of both philosophy and history.

The mutability of discourse is also the theme of the next objection, which casts a rather weary eye over the theoretical innovation of its day and wonders how many of the youthful pretenders will stay the course. Unsurprisingly, given Foucault's well-known fondness for change and uncertainty, and again demonstrating consistency with the principles of discourse he has set out, the prospect that archaeology might prove to be a short-lived stage on the way to something else does not concern him.

The final question Foucault poses to himself is more interesting: if every discursive event is rule governed, and if the adoption of archaeology has led to a proliferation of such rules, then does archaeology not take away the freedom of individuals to act and speak in the way they choose? The objection assumes that freedom is essentially spontaneous and unregulated, and that the subject is fundamentally free before being caught up in situations that impose constraints. From this perspective, the more rules are present in any given situation, the less freedom one has to act and to think for oneself: ironically, given Foucault's comment at the end of the Introduction to *The Archaeology of Knowledge*, his analysis is painted here as a kind of bureaucratic nightmare in which individuals are frustrated by a tangle of incomprehensible regulations. The objection is, however, misconceived, or at least Foucault does not share its basic premise about the subject and freedom. He explains that the positivities, the complex networks of discursive relations, he has described are not imposed from outside as constraints on a subject endowed with an innate freedom. Rather, they are to be thought of as constituting the field in which the freedom of the subject is articulated, as rules it puts into operation, and relations which provide it with support (AK 230, 272). In each case, the initiative of the subject plays a part without being the origin or the focus of the relations and rules in which it participates. Reading this now, one can see it through the lens of Foucault's later writing on freedom, the subject and power. But this idea of action within a 'field' of relations that serve as rules is also prefigured in mathematics. For Cavaillès, concepts are operations that act on objects which have themselves been constructed and there is no such thing as a mental act for which the subject then finds a suitable form of expression, and therefore no inner freedom to experience the rules of discourse as a constraint. In some respects, this is the familiar

scenario that there can be no thinking without language. More specifically, in 1967 Derrida published *La Voix et la phénomène*, in which he deconstructs the distinction between an inner intention and its outward expression, thereby demonstrating that a pure intention is impossible. There is, then, nothing unique in this claim. However, linking Foucault's position here to mathematics, and to Cavaillès in particular, does add something distinctive. First, it is not the case that the act of thinking necessarily depends on an external medium, and therefore has to conform to the rules belonging to it. This would leave open the possibility that the subject thinks using 'ready-made' materials, which nonetheless organise an intention that is already there. Instead, the act of thought constructs an object according to rules, but in doing so it responds to a problem that arises in a specific setting. To think is to take part in a pattern of conceptual development, and to carry out the steps by which a demonstration unfolds or new concepts and objects are produced. As such, the act is itself conditioned by the history of the operation it performs, without being determined by it. Because the rules of discursive formations are temporal, to engage with discourses beyond those that are closest and most familiar will be to expose one's own temporal configurations – what Bachelard would call the rhythms of one's own duration – to disruption and interference from outside. Enlivened, hopefully they will be recomposed in a pleasing way.[39] Going back to Foucault's Introduction, this is at least a part of what it means 'to conceive of the *Other* in the time of our own thought' (AK 13, 21).

In the final three or four paragraphs of the book, Foucault turns the tables and challenges his imagined interlocutor to clarify the motivation behind the various objections that he raises, and the issues are very much those just outlined. Is there not asks Foucault, a kind of fear that speaks in many of the criticisms levelled at what he is doing? Do the objections not express a desire for the calm of an order that, if not eternal, is at least continuous, whole and predictable? One thinks of Lucretius here, urging his readers not to fear the vision of contingency and multiplicity that he presents, and instead to understand that ataraxy can be achieved through an understanding of its principles.[40] Epicurus declared that we should not fear death because it lies beyond the limits of our experience, and Foucault seems almost to play on this idea here in accepting that in discourse he does not banish his death, but may on the contrary establish it, allowing interiority to be dissolved in an exteriority that is indifferent to his life. His description of this exteriority as neutral invokes Blanchot again, and the confluence of literature and death.[41] The message is: I should not expect my engagement

in discourse to bring comfort and a tenuous immortality, but neither should I fear the dissolution it threatens. Discourse is not life, Foucault writes, but actually it only really brings about the death of man as the central figure in the constitution of knowledge in modernity. It is our part in this drama that is ending. Beyond their inscription in this role, however, the lives of individuals go on as freely and as passionately as before.

CLOSING REMARKS

The Archaeology of Knowledge begins with a review of methodologies adopted by contemporary historical writing, but it quickly becomes clear that this is part of a far bigger concern. As in much of Foucault's writing, a meticulous attention to the detail of history is accompanied by an aspiration to change not just what is thought but the terms or conditions in which thought takes place. To appreciate the aims of this book, one therefore has to consider the currents of history in which it moves, and these are defined above all by the problem to which it responds. As I set out in the Introduction, in Foucault's view thinking in modernity had become caught in an impasse from which it could not escape without undergoing a radical change, one to which *The Archaeology of Knowledge* is intended to add its own impetus. To make sense of this book one therefore must also place oneself in the future it works to open up. Saying this might imply that one has to take sides and either fail to understand his approach or endorse it fully, surrendering a critical perspective on what it achieves and on its methods. But this is not the case; in fact, nothing would be more alien to Foucault's own way of thinking. It simply means that what Foucault tries to do in *The Archaeology of Knowledge* does not make sense from the standpoint of the historical situation to which it responds. In this respect, the book has the character of an intervention and one has to be prepared for the framework of historical and philosophical thought it engages to be modified in some way.

The difficulty of exceeding a limit that defines the current possibilities of thinking has become a relatively familiar problem, and one addressed in various ways by thinkers such as Nietzsche, Heidegger, Derrida and Deleuze. In what can only be a rough characterisation here, the difficulty may be understood to lie in the way the limit is conceived as so deeply embedded in the subject that to contravene it is literally unthinkable. Thinking, then, tests the limits of what is possible, intimating what it cannot summon up from within itself without ceasing to make sense, without the subject disavowing itself as a subject. If this path leads ultimately to a risk of madness that comes with the separation of the subject from itself, for Foucault it is history that spares us from having to travel down it, in the sense that history absolves the subject of being uniquely responsible for initiating the changes required to carry thinking on to a new future. The changes that Foucault proposes have their own history, which lies mainly in work related to science and mathematics carried out by Bachelard, Cavaillès and others. Once this is taken into account, the displacements and innovations introduced in *The Archaeology of Knowledge* can be seen to have their own precedents. Without detracting from the originality of

what Foucault achieves in this text, it can thus be read as a development of work already undertaken, and in this respect less as a singular assault on orthodoxy than as a continuation of what thinking had become, or was in the course of becoming.

Reading *The Archaeology of Knowledge* in this way has the advantage of placing its innovations in the context of a pattern of responses to the end of a certain configuration of philosophy. In particular, it highlights the link between his elaboration of archaeology and his earlier engagement with anthropology in Kant, and thereby also with his recommendations for the renewal of critical philosophy. Time, in the form of temporal dispersion, takes on a pivotal role, and the strategic release of thinking from the grip of the distinction between transcendental and empirical philosophy is underlined as the leitmotiv running throughout the text.

If *The Archaeology of Knowledge* was intended to herald a new form of thought, does the fact that Foucault's later books do not reproduce its analytical framework and terminology mean that it failed, or had only a qualified success? That it did not solve the problem once and for all is no surprise, and should be no reason for criticising it. Moreover, its success should not be measured in terms of its longevity. While it is true that the precise terminology of *The Archaeology of Knowledge* is not reproduced in later analyses, if one looks beyond the letter, one finds the spirit – the aspiration – of the text very much alive. It is as though the intense focus on terms, distinctions, thresholds, limits, and patterns of discourse in *The Archaeology of Knowledge* opened up a dimension and form of analysis that subsequent studies could then occupy, and even transform, without having to begin each time from first principles. In other words, modes of thought from mathematics and the natural sciences are shown in *The Archaeology of Knowledge* to have responded, deliberately or otherwise, to the fundamental crisis in knowledge in modernity that Foucault had identified in *The Order of Things*. Moreover, Foucault demonstrates that such modes of thought not only had something important to say about the construction of knowledge in their own domains, but that the innovations they evolved could be extended to fields of inquiry that more traditional configurations of knowledge have generally held apart from science. In fact, the reasons for demarcating the humanities from the natural sciences lie primarily in the framework that had, in Foucault's view, become the source of the problem; namely, the distinction between transcendental and empirical forms of inquiry and their placement around the figure of man. In so far as Foucault, following precedents in the mathematical sciences, breaks down this framework, he opens up a stratified

dimension for thinking in which traditional boundaries between disciplines break down into more complex patterns of both continuity and discontinuity – a theme that has also been central to Serres' work.

To say that *The Archaeology of Knowledge* opens up a dimension that later analyses occupy is not to affirm a continuity running through Foucault's work from early to late. The idea that the principles of such analyses, once set, should be left intact is both at odds with Foucault's own restless revision of his own methods and inconsistent with the recognition, repeated many times in *The Archaeology of Knowledge*, that conditions may be transformed by the conditioned to which they give rise. To claim that *The Archaeology of Knowledge* has a lasting importance for Foucault's later work is simply to point out that, as Foucault himself argues, what appear to be sharp displacements between disciplines, periods, or methodologies are less straightforward than they may seem at first and generally involve threads of continuity, or incremental change as well as sharp breaks and divergences. To identify a motif that appears to remain consistent across such transformations is inevitably to invite its exposure as fractured and mobile, but one might point to the way Foucault traces the conditions of knowledge and existence in a conception of actuality that is always a work in progress. While there is no appeal to transcendental conditions beyond the level of events analysed, such events are not taken as simply given. The entities in question, what counts as an event, the kind of relations between events that are considered significant, and more besides, are all subject to continual revision. However, because Foucault's method is developed specifically to allow analysis to operate across different levels without losing its footing, it is also capable of adapting to the challenges presented by historical change, and by new fields of enquiry.

Beyond its methodological significance, the recognition of change across different levels of analysis is also important for the formation of subjects – an issue that was always one of Foucault's central concerns. While it is true that *The Archaeology of Knowledge* restricts its consideration of the subject in the main to the construction of enunciative functions, Foucault's analyses avoid the traditional dichotomy between a commitment to a sense of human freedom that transcends the material world on the one hand and the inevitability of empirical determinism on the other. As a result, they put in place resources for later analyses of the conditions of actual existence, action and speech that extend what is presented in *The Archaeology of Knowledge*. Without claiming that the later work is simply prefigured in *The Archaeology of Knowledge*, which is too simplistic to the case, one theme nonetheless stands out as especially significant. Foucault's engagement with

ethics in his later writing contrasts with an earlier emphatic diagnosis of the inability of thinking in modernity to address the question. In *The Order of Things*, Foucault describes how thought in modernity inevitably transformed that which it sought to grasp, setting it in movement (OT 327). As a function of the idealism that remained an inescapable condition of knowledge, this reflected both the fact that the object was revealed as familiar to the subject by virtue of its conditions of possibility, and yet that it was at the same time made more remote. This distancing arose, Foucault explained, because man's own being was made to change as a result of its being deployed in the distance between thought and its object (OT 327). There is, he adds, something about this which is tied in directly with the repertoire of ethical thought in the West. Leaving religious moralities to one side (assuming that they can be easily separated out), he identifies fundamentally two ethical forms. In pre-modern thought, ethics was premised on an understanding of the order of the world, the discovery of which served as a basis for a code of wisdom, and even for a conception of political organisation. Such a view is exemplified in the stoics, Foucault writes, though one could easily trace the same motif in Aristotle and even Plato. But in modernity, 'any imperative is lodged within thought and its movement towards the apprehension of the unthought' (OT 328). It is committed to giving speech to what is silent, to illuminating what has remained in darkness. Its aim is to articulate the finite being of man that grounds the relation between the subject of knowledge and what it knows. In practical terms, Foucault proposes that the imperatives of ethics attest to the search for a ground that cannot be attained because of the very framework of thought from which such imperatives arise. Structurally unable to grasp its own being, the subject in modernity cannot provide the ground for knowledge that it desires, and in so far as ethics is construed as a form of knowledge it is not exempt. Foucault's conclusion is that 'For modern thought, no morality is possible' (OT 328).

Archaeology does not promise a direct response to this problem, but it does describe a change to the framework in which the problem arises. History takes on an important role by providing what might be called a late modern analogue of the order of the world that served as a basis for ethics prior to modernity. The codes of knowledge that underpin a modern, or perhaps late modern, counterpart to wisdom and ethics are historical. In the context of Foucault's archaeology, this means that they are local and not universal, since historical change does not conform to a single law or principle. The knowledge that may provide a basis for ethics is therefore a knowledge not of the natural world, but of the historical world. Most important of all, it is not a knowledge of

events but of the regularities that shape events, of the limits of the discourses that define them, and thereby what can be known and spoken about at a given time, and the position that the subject can take up within and with respect to such discourses.

In so far as this is not a traditional form of history one is brought back to the opening of *The Archaeology of Knowledge*, where Foucault reviews modifications to historical method that have begun to emerge. But now one can see that the form of history he proposes has a larger part to play in contemporary thought than it might at first seem. The unachievable pursuit of the unthought in modernity is replaced by the analysis of the historical conditions of the construction of knowledge and experience. Yet these, too, are impossible to grasp definitively. Has thinking therefore exchanged one abyss for another? No, since archaeology can always press its analyses further, taking in more detail, revising as it goes. By breaking the historical a priori conditions down into different strata and patterns of regularity, the subject of archaeology reveals the contingent provenance of what may seem initially to be binding rules and conditions. Gaps and disjunctions appear. Where the subject in modernity was faced with the impossible task of taking hold of itself as a knowing subject, Foucault describes a situation in which the subject can re-shape the regularities that define what it can know, say and do. It is, then, by hastening the disappearance of man, by displacing the subject from its central role in the enterprise of knowledge, and by adapting conceptions of historical form and analysis that had emerged in the mathematical sciences that Foucault reveals scope for a renewal of ethical practice.

Notes

BACKGROUND

1. I will follow Foucault in his use of 'man' throughout the book in order to be consistent with published texts.
2. The French 'le veçu' is translated in the published edition of *The Order of Things* as 'actual experience', which has been modified here to 'lived experience.' 'Le veçu' is the French translation of the German term 'Erlebnis' that occurs in Husserl, and which is usually translated into English as 'lived experience'. Adopting this translation brings out the connection between Foucault's analysis in these passages and phenomenology.
3. Foucault actually refers to the irreducibility of its 'space'. However, the spatiality of Dasein is understood in temporal terms. The key point is that the dimension of Dasein's existence is the sole arena for the disclosure of Being.
4. Cf. 'Science and Knowledge' (AK Part IV, Chapter 6) where Foucault contrasts archaeology with a phase of analysis that is associated with Bachelard (AK 209–10).
5. Bachelard welcomed the development of set theory at least in part because it liberated intuition from sensible objects. Cf. Bachelard, 'L'oeuvre de Jean Cavaillès', in Ferrières, *Jean Cavaillès Un philosophe dans la guerre 1903–1944*, pp. 235–48.
6. The fifth postulate was stated by Euclid without a proof. It sets out the properties of two lines as they intersect a third, but it leads to the consequence that where there is a line and a point not on the line, there is only one line parallel to the first that runs through the point.
7. Bachelard gives the example of the Millikan experiment. 'The Millikan experiment is one where the unity of the electric charge is isolated and translated by a direct action. By using a microscope to observe the movement of a drop of oil condensed upon an electron, and through the counter action of an electric field and gravity, the two characteristics of the electron, that is, its mass and its charge, can be determined. This delicate experience seems at first to be the triumph of scientific "*chosism*," yet upon further examination of the philosophical problem we realise that the

free electron is truly an electron without atomic properties. What interests us are the properties of the allied electron, of the electron in relation to the proton. The Millikan experiment is thus an experience of our world because it is detached from the mathematical perspective of the atomic world. In leaving the atomic world, the free electron leaves the mathematics of the atom' (NM 76).

8. In *La philosophie du non*, Bachelard writes that microphysics is essentially noumenal: 'its constitution requires that thinking (*les pensées*) be put before experiences, that experiences be remade on the basis of thinking...' (PN 103–4).
9. Cf. 'The Mathematical A Priori' below, pp. 31–4. Foucault suggests that Kant's critical philosophy be repeated on the basis of the mathematical a priori. The laws as Bachelard describes them in the essay 'Noumena and Microphysics' are neither abstractions from experience, nor pure transcendental or formal conditions. Although Bachelard doesn't say this explicitly, they are the conditions for the existence of quite specific objects, and not universal conditions for the possibility of experience (cf. PN 106). This can also be seen as prefiguring Foucault's description of the rules of discursive formations in *The Archaeology of Knowledge*.
10. Bachelard warns that 'there is nothing more dangerous than postulating the simplicity, the independence, and the unity of beings' (NM 76). His concern here is above all that apparent simplicity at the noumenal level invokes a world of naturalised objects, and that this in turn may slow down scientific creativity.
11. Raymond Barsotti's 'The "Non-Kantianism" of Bachelard: Towards the Transcendental Sense of the Epistemological Break' is particularly helpful on this point.
12. *The Birth of Biopolitics* is the text of the lecture course that Foucault gave at the Collège de France in 1979. Having explained that his method consists in starting off with the assumption that universals do not exist, and then asking what kind of history it is possible to write, he adds: '[Politics and the economy] are things that do not exist and yet which are inscribed in reality and fall under the regime of truth dividing the true and the false' (p. 20). This is just one of a great many examples that could have been given here.
13. The lines quoted continue: 'always it was the embroidery that we saw, never the fabric, always the shadows and reflections mirrored on a restless river, never its deep, pellucid waters'. The reference to embroidery and fabric ties Bachelard's remarks back to a text from Roupnel from which he quoted earlier in the essay: 'Our acts of attention are episodes of sensation extracted from the continuity we call duration. Yet the continuous fabric of which our minds embroider discontinuous patterns of acts is but the mind's laborious and artificial construct' (TI 69).
14. Gaston Roupnel was a historian of the Burgundy region who made geographical themes the objects of historical study. His work was in part

associated with the Annales group, though he remained a marginal figure. Cf. Whalen, 'Gaston Roupnel (23 September 1871–14 May 1946)', in Daileader and Whalen (eds), *French Historians 1900–2000*, pp. 527–44.

15. Physics IV.10 217b29–218b20.
16. Cf. Weyl, *The Continuum*, p. 93.
17. Foucault, 'Life: Experience and Science', in *Aesthetics, Method, and Epistemology*, p. 466.
18. Cavaillès, 'On Logic and the Theory of Science', p. 409. Cavaillès was executed in 1944 as an active member of the Resistance during the German occupation of France. During a period of imprisonment, remarkably, he wrote this long and closely argued essay setting out his views on mathematics and logic. The essay, still incomplete, was edited by his friends and colleagues Canguilhem and Ehresmann and published posthumously under the title of *La logique et la théorie de la science*.
19. Cf. Thompson, 'Historicity and Transcendentality: Foucault, Cavaillès, and the Phenomenology of the Concept' and 'Response to Colin Koopman's "Historical Critique or Transcendental Critique in Foucault: Two Kantian Lineages"'. Cf. also Webb, 'Cavaillès and the Historical a priori in Foucault'.
20. Intuitionism proposes that mathematics be understood as a constructive practice rooted in the activity of the mind. Intuitionism is opposed to the formalism of David Hilbert.
21. Cf. also Pierre Cassou-Noguès, *De l'expérience mathématique: Essai sur la philosophie des sciences de J. Cavaillès*, pp. 272–3.
22. Cf. Sinaceur, *Jean Cavaillès: Philosophie Mathématique*, p. 90.
23. Serres with Latour, *Conversations on Science, Culture and Time*, p. 37.
24. Dosse, *History of Structuralism Vol. 1*, p. 89.
25. Nicolas Bourbaki was the pseudonym for group of mathematicians including Henri Cartan, Claude Chevalle, Jean Dieudonné, André Weil and Charles Ehresman (who later co-edited for publication Jean Cavaillès' posthumous work 'On Logic and the Theory of Science'). The group published a series of works aiming to provide a rigorous system of mathematics based on set theory.
26. Serres: 'The self-description carried out by an internal epistemology has . . . an impact of primary importance on the object described; far from stabilising and naturalising it, the description reconstitutes it, reanimates it, restructures it' (HI 64).
27. The idea of naturalised epistemology first makes an appearance in Quine's essay 'Epistemology Naturalized' in *Ontological Relativity and Other Essays*. Quine advocated that epistemology simply be replaced by empirical psychology and linguistics. Few have followed him all the way on this, and weaker versions have been developed. However, the idea of replacement has re-emerged in the work of Paul and Patricia Churchland's programme of eliminative materialism.
28. Kuhn, *The Structure of Scientific Revolutions*. At least to some extent,

Kuhn's analysis continues to rely on a distinction between the 'internal' rationality of a science and the 'non-scientific' factors that can and do shape it, and which can intervene decisively at times of crisis. This is a distinction that Foucault does not accept as fundamental. The point is discussed on p. 123.

29. Lucretius, *On the Nature of the Universe*, cf. especially Book II, and Serres, *The Birth of Physics*.
30. The second in the series of *Hermes* volumes that Serres published is subtitled *L'interférence*.
31. Serres, *Le Système de Leibniz et ses modèles mathématiques*, pp. 10–11. Descartes and the majority of the rationalist tradition have left us with the idea of linearity as the only acceptable form of rational relation, but Serres draws from Leibniz that rationality can also be embodied in the network, the fabric, or embroidery. This does not mean that there is a single pattern either unfolding or repeated across all areas, but rather that in each region one finds each point linked to most or all of the others. In this respect, observes Serres, Leibniz is not of his time, having instead more in common with the stoics and with our own epoch. The stoics proposed the interconnection of all things, and the concept of networks and complexity is characteristic of contemporary thinking.
32. Serres, *Le Système de Leibniz*, p. 65.
33. Serres, *Le Système de Leibniz*, p. 65.
34. Serres, *The Birth of Physics*.
35. Lucretius, *On the Nature of the Universe* II, pp. 218–19. The fact that it escapes determination has led the philosophical tradition to look on the clinamen with some suspicion, not to say disdain, and to regard it as little more than an *ad hoc* hypothesis to bridge the gap between the infinite uniform rain of atoms and the emergence of order. But the clinamen is neither an *ad hoc* principle nor the sign of a gap in our knowledge. While it is true that the clinamen falls below the threshold of measurement, this does not necessarily mean that there is a true physics waiting for improvements in instrumental precision.
36. History is not the attempt to bring external events into the realm of memory, but rather the attempt to analyse memory as it occurs, externalised, in the conjunction of atoms (BP 148). By contrast, 'the universal does not require any memory', precisely because its law is absolute.
37. Cavaillès published *Mèthode axiomatique et formalisme* in 1938, but the theme of formalism remained a focal point of his thought in essays such as 'Mathématique et formalisme', published posthumously in *Revue internationale de philosophie* in 1949, in an edition prepared by Canguilhem.
38. Foucault, *Introduction to Kant's Anthropology*, p. 89.
39. Heidegger, *Kant and the Problem of Metaphysics*, pp. 172–3 and 215–21; *Being and Time*, p. 45.
40. Kant, *Anthropology from a Pragmatic Point of View*, p. 3.

COMMENTARY ON *THE ARCHAEOLOGY OF KNOWLEDGE*

1. Cavaillès sets out his critique of Husserl in the third section of his essay 'On Logic and the Theory of Science' (OC 473–560). For accounts of this reading, see Cassou-Noguès, *De l'experience mathématique: essai sur la philosophie des sciences de J Cavaillès*, pp. 282–308; Sinaceur, *Jean Cavaillès Philosophie mathématique*, pp. 84–124; Webb, 'Cavaillès, Husserl and the Historicity of Science'.
2. Mayr, *What Evolution Is*, p. 81.
3. Cf. AK 212, 251. Note also that Foucault often contrasts his own approach to that of the Frankfurt School, where questions of legitimacy are central.
4. The idea will be familiar to many from the account of paradigms as central to scientific inquiry introduced by Thomas Kuhn in *The Structure of Scientific Revolutions*. See p. 125 for a discussion of issues relating to incommensurability.
5. Husserl, *Formal and Transcendental Logic*.
6. Foucault returns to this question in the Conclusion (AK 226–7, 268). See also p. 154.
7. The translation may be misleading here. It runs 'one replaces the pure aims of non-contradiction in a complex network of conceptual compatibility and incompatibility' (AK 69, 83), where 'one replaces' is a literal translation of the French '*on replace*', which in this instance appears to denote an action of 'placing back' or 'returning something to'. Thus 'the pure aim of non-contradiction' is placed back into a complex network of conceptual compatibility and incompatibility that includes many forms of relation besides that of simple contradiction. This may be more helpfully translated here as 'one places back'.
8. Serres, *The Troubadour of Knowledge*, p. xv.
9. In a similar fashion, modalities of enunciation are described on the basis of the position occupied by the subject in relation to a domain of objects. Giving an example that does not precisely match the description, Foucault observes that, given the system of formation of objects in natural history in the eighteenth century, certain enunciative modalities are excluded and others implied. Similarly, given different enunciative modalities, certain coexistences of statements are excluded or required.
10. Bachelard, *Les Intuitions atomistiques*; cf. especially Chapter II, 'L'Atomisme réaliste'.
11. To the objection that statements can be seen and heard, and that they are therefore not 'sub-phenomenal' in the sense that an atom is, one can respond that it depends on what one takes as real, and where the threshold of visibility is placed; if one deals with objects, subjects, science, traditions and books, then the statement is invisible. In fact, statements and atoms have this in common: it is through regularities in their relations to one another that objects, concepts and subject positions are formed.

12. Bachelard, *Les Intuitions atomistiques*, p. 125.
13. The published translation erroneously includes a negation here: '. . . are not constituted. . .'.
14. There is a mistranslation in the English text here. It runs: 'A sentence cannot be non-significant; it refers to something, by virtue of the fact that it is a statement.' This would be better translated as: 'Even though a sentence may be meaningless (*Une phrase a beau être non signifiante*), it refers (or is related to) something by virtue of the fact that it is a statement' (AK 102, 119).
15. Mathematics depends on demonstration, and not on an experience of certainty. Indeed, such an experience, for Cavaillès, represents the end of thinking. In this sense, we can see that for Cavaillès the future of mathematics is open and cannot be foreclosed by any form of subjective experience, however rigorously determined. Foucault would be of the same mind.
16. Foucault also uses the expressions 'associated field' and 'enunciative field' apparently interchangeably.
17. For an associated field to have enough regularity to do the job of specification required, it must already be differentiated from the total field of all statements. This could be taken to imply that there is another, still unacknowledged, layer of the account that explains how associated fields emerge, which would lead to an uncomfortable regression. However, the point has already been covered by the idea that the prediscursive is itself discursive (see p. 84).
18. Heidegger, *Being and Time*, §34.
19. HI 11, and Serres, *The Troubadour of Knowledge*, pp. 21–2.
20. The account of construction that Cavaillès gives, above all in 'Transfini et continu', is instructive in this respect. Even within the unity of the history of mathematics that is a non-negotiable condition for Cavaillès, there is a pull towards temporal pluralism. Moreover, the concept itself has temporal characteristics, rather than being an ideal structure that participates in a temporal process (synthesis). See Sinaceur, *Jean Cavaillès: Philosophie Mathématique*, p. 117. However, the most significant precedent for the way that time works in *The Archaeology of Knowledge* is the work of Serres, which contains many re-workings of the idea of temporal pluralism in an unbounded material process. See for example, Serres, *Genesis*, pp. 115–17.
21. Foucault, *Aesthetics, Method, and Epistemology*, p. 148.
22. Foucault, *Aesthetics, Method, and Epistemology*, p. 149.
23. Foucault also puts the converse question: is the account of discursive formations presented earlier actually dealing with statements? This is important because if it is not, then his earlier work will appear to have been developed on the basis of a sense of the statement that he now, on careful reflection, has found to be inadequate.
24. To express this here, I've used the notion of regularity from Serres' reading

of atomism in *The Birth of Physics*, but a similar point could be made in relation to Cavaillès' understanding of the historical dimension of mathematics, where the rules for the formation of mathematical objects are themselves the outcome of a recursive historical process.

25. See p. 46 and p. 157.
26. Foucault refers to Serres' use of the idea of recurrence in his Introduction to *The Archaeology of Knowledge* (AK 5, 11), and does so again in the final chapter, 'Science and Knowledge' (AK 209, 248). Serres writes about recurrence and the history of mathematics in the chaper 'Les Anamnèses Mathématiques' in HI, especially pp. 94–104. Bachelard had written about recurrence in history before him, in *L'activité rationaliste de la physique contemporaine*, pp. 26–8.
27. One could see this idea of 'recurrence' as simply reflecting the fact that historical events can be reinterpreted in many ways, and thereby tied in to different versions of the past, but such a reading would be compatible with the existence of a 'real' chain of events concealed beneath a variety of appearances.
28. Serres, *Conversations on Science Culture and Time*, pp. 60–1.
29. This is not to suggest that Foucault saw himself as acting alone to open up new possibilities for the future of thinking. There were precedents, and some of these are outlined in Part A above.
30. In *Hermes I*, Serres, who was in turn following Bachelard, called for a new form of epistemology combining the formal rigour of the mathematical sciences with an analysis of historical life that addresses what has been treated as the symbolic world of cultural meaning. This proposal is set out in the Introduction, which has the sub-title 'The Network of Communication: Penelope', referring to the myth in which Penelope weaves and unweaves the burial shroud she pretends to be making for the long-departed Odysseus, thereby holding off her suitors. The process of weaving and unweaving of networks of communication becomes for Serres the condition of time. Many years later, he describes time as a 'patchwork' through which redundancy passes, fluctuating between disorder and rigid formalisation (*Genesis*, pp. 116–17). On Serres' call for the marriage of mathematical thought and historical analysis, see Webb, 'Michel Serres: From the History of Mathematics to Critical History' in Herzogenrath, Bernd *Time and History in Deleuze and Serres*, pp. 68–86.
31. Foucault, *Introduction to Kant's Anthropology*, p. 89.
32. Foucault writes: 'In trying to play the game of a rigorous description of the statements themselves, it became apparent to me that the domain of statements did obey formal laws, that, for example, one could find a single theoretical model for different epistemological domains; and in this sense one could conclude that there was an autonomy of discourses. But there is nothing to be gained from describing this autonomous layer of discourses unless one can relate it to other layers, practices, institutions, social relations, political relations, and so on.' 'On the Ways of

Writing History', in *Aesthetics, Method, and Epistemology 1954–1984*, p. 284.

33. Given Foucault's closeness to Bachelard, it is no surprise that this position reflects that of Bachelard more than that of Bergson.
34. Foucault, *Aesthetics, Method, and Epistemology*, p. 284.
35. Foucault, *Aesthetics, Method, and Epistemology*, p. 283.
36. Serres, *Genesis*, pp. 116–17.
37. Cf. Phillipe Sabot, 'Archéologie du savoir et histoire des sciences. Y a-t-il un "style Foucault" en épistemologie?' in Cassou-Noguès, *Le concept le sujet et la science*, pp. 109–24.
38. Cf. HI 94, but also the whole section leading up to it.
39. Bachelard: 'Life is strictly contemporaneous with material transformations and impossible without their unceasing help, without the interplay of assimilation and dissimilation . . . When life is successful, it is made of well-ordered times.' *The Dialectic of Duration*, Chapter 8, 'Rhythmanalysis', p. 44.
40. Lucretius: 'For once your reason, born of mind divine / Starts to proclaim the nature of the world / The terrors of the mind flee all away, / The walls of heaven open, and through the void / Immeasurable, the truth of things I see'. *On the Nature of the Universe*, Book 3, 14–17.
41. Blanchot, 'Literature and the Right to Death', in *The Station Hill Blanchot Reader*, pp. 359–99.

Selected Bibliography

WORKS BY FOUCAULT

Aesthetics, Method, and Epistemology: The Essential Works of Foucault 1954–1984 (Bath: Allen Lane The Penguin Press, 2000).

History of Madness, ed. Khalfa, John, trans. Khalfa, John and Murphy, Jonathan (London: Routledge, 2009).

Introduction to Kant's Anthropology, trans. Nigro, Roberto and Brigs, Kate (Los Angeles: Semiotexte, 2008).

L'archéologie du savoir (Paris: Gallimard, 1969). *The Archaeology of Knowledge* trans. Sheridan Smith, A.M. (London and New York: Routledge, 1989).

Les mots et les choses: une archéologie des sciences humaines (Paris: Gallimard, 1966). *The Order of Things* (London: Routledge, 1970).

The Birth of Biopolitics, trans. Graham Burchell (Basingstoke: Palgrave Macmillan, 2008).

The Birth of the Clinic, trans. Sheridan Smith, A.M. (London: Tavistock, 1976).

WORKS BY GASTON BACHELARD

Dialectic of Duration, trans. McAllester Jones, Mary (Manchester: Clinamen Press, 2000).

La dialectique de la durée (Paris: Presses Universitaires de France, 1950). *The L'activité rationaliste de la physique contemporaine* (Paris: Presses Universitaires de France, 1951).

La formation de l'esprit scientifique (Paris: Vrin, 1938). *The Formation of the Scientific Mind* (Manchester: Clinamen Press, 2002).

La philosophie du non (Paris: Presses Universitaires de France, 1940).

Les Intuitions atomistiques (Paris: Boivin & Co, 1933).

L'Intuition de l'instant (Paris: Stock, 1931). 'The Instant' (abridged) trans. McAllester Jones, Mary in Durie, Robin (ed.), *Time and the Instant* (Manchester: Clinamen Press, 2000), pp. 64–95.

'Noumena and Microphysics', trans. Reggio, David, *Angelaki*, Vol. 10, No. 2,

2005, pp. 73–8. 'Noumène et microphysique', *Études* (Paris: Vrin, 1970), pp. 11–24.

WORKS BY JEAN CAVAILLÈS

'On Logic and the Theory of Science', trans. Kisiel, Theodore, in Kockelmans, Joseph and Kisiel, Theodore, *Phenomenology and the Natural Sciences* (Evanston: Northwestern University Press, 1970), pp. 353–409. 'Sur la Logique et la théorie de la science', in Cavaillès, Jean, *Oeuvres complètes de philosophie des sciences* (Paris: Hermann, 1994), pp. 473–560.

The following texts are also included in Cavaillès, Jean, *Oeuvres complètes de philosophie des sciences*:

'La théorie de la science selon Bolzano' (OC 653–4).
'Mathématique et formalisme' (OC 659–64).
'Réflexions sur le fondement des mathématiques' (OC 577–80).
'Transfini et continu' (OC 451–72).

WORKS BY MICHEL SERRES

Conversations on Science Culture and Time, with Latour, Bruno (Ann Arbor: University of Michigan Press, 1995).
Genesis, trans. James, Geneviève and Nielson, James (Ann Arbor: University of Michigan Press, 1995).
Hermes I: la communication (Paris: Minuit, 1968).
Hermès II: l'interference (Paris: Minuit, 1972).
Le Système de Leibniz et ses modèles mathématiques (Paris: Presses Universitaires de France, 1968).
The Birth of Physics (Manchester: Clinamen Press, 2000).
The Troubadour of Knowledge, trans. Glaser, Sheila Faria and Paulson, William (Ann Arbor: Michigan University Press, 1997).

OTHER WORKS

Aristotle, *Physics*, Vol. 1, trans. Wicksteed, Philip and Cornford, Francis (London: William Heinemann Ltd, 1929).
Barsotti, Raymond, 'The "Non-Kantianism" of Bachelard: Towards the Transcendental Sense of the Epistemological Break', *Angelaki*, Vol. 10, No. 2, 2005, pp. 89–102.
Blanchot, Maurice, *The Station Hill Blanchot Reader*, trans. David, Lydia; Auster, Paul; Lamberton, Robert (New York: Station Hill, 1999).
Canguilhem, Georges, *The Normal and the Pathological*, trans. Fawcett, Carolyn R. (New York: Zone Books, 1991).
Canguilhem, Georges, *A Vital Rationalist: Selected Writings From Georges*

Canguilhem, trans. Goldhammer, Arthur (New York: Zone Books, 2000).
Canguilhem, Georges, *Knowledge and Life*, trans. Ginsburg, Daniela (New York: Fordham University Press, 2008).
Cassou-Noguès, Pierre, *De l'expérience mathématique: Essai sur la philosophie des sciences de J. Cavaillès* (Paris: Vrin, 2001).
Cassou-Noguès, Pierre (ed.), *Le concept le sujet et la science* (Paris: Vrin, 2009).
Churchland, Paul, *A Neurocomputational Perspective: The Nature of Mind and the Structure of Science* (Cambridge, MA: MIT Press, 1989).
Derrida, Jacques, *Speech and Phenomena*, trans. Allison, David B. (Evanston: Northwestern University Press, 1963).
Dosse, François, *History of Structuralism Vol. 1: The Rising Sign* (Minneapolis: University of Minnesota Press, 1998).
Durie, Robin (ed.), *Time and the Instant: Essays in the Physics and Philosophy of Time* (Manchester: Clinamen Press, 2000).
Ferrières, Gabrielle, *Jean Cavaillès Un philosophe dans la guerre 1903–1944* (Paris: Felin, 2003).
Han-Pile, Beatrice, *Michel Foucault's Critical Project: Between the Transcendental and the Historical* (Stanford: Stanford University Press, 2002).
Heidegger, Martin, *Being and Time*, trans. Macquarrie, John and Robinson, Edward (Oxford: Blackwell, 1962).
Heidegger, Martin, *Kant and the Problem of Metaphysics*, trans. Taft, Richard (Bloomington: Indiana University Press, 1990).
Herzogenrath, Bernd, *Time and History in Deleuze and Serres* (London: Continuum Press, 2011).
Husserl, Edmund, *Formal and Transcendental Logic*, trans. Cairns, Dorion (The Hague: Martinus Nijhoff, 1978).
Kant, Immanuel, *Anthropology From a Pragmatic Point of View*, ed. and trans. Louden, Robert B. (Cambridge: Cambridge University Press, 2006).
Kuhn, Thomas, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962).
Lucretius, *On the Nature of the Universe*, trans. Melville, Ronald (Oxford: Oxford University Press, 1999).
Mayr, Ernst, *What Evolution Is* (London: Weidenfeld and Nicholson, 2002).
McAllester Jones, Mary, *Gaston Bachelard, Subversive Humanist: Texts and Readings* (Madison: University of Wisconsin Press, 1991).
Oksala, Johanna, *Foucault on Freedom* (Cambridge: Cambridge University Press, 2005).
Privitera, Walter, *Problems of Style: Michel Foucault's Epistemology*, trans. Keller, Jean (Albany: SUNY Press, 1995).
Quine, Willard van Orman, *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969).

Sinaceur, Hourya, *Jean Cavaillès: Philosophie Mathématique* (Paris: Presses Universitaires de France, 1994).

Thompson, Kevin, 'Historicity and Transcendentality: Foucault, Cavaillès, and the Phenomenology of the Concept', *History and Theory*, Vol. 47, 2008, pp. 1–18.

Thompson, Kevin, 'Response to Colin Koopman's "Historical Critique or Transcendental Critique in Foucault: Two Kantian Lineages"', *Foucault Studies*, Vol. 8, 2010, pp. 122–8.

Webb, David, 'Cavaillès and the Historical a priori in Foucault', in Duffy, S. (ed.), *Virtual Mathematics: The Logic of Difference* (Manchester: Clinamen Press, 2005), pp. 100–17.

Webb, David, 'Cavaillès, Husserl and the Historicity of Science', *Angelaki*, Vol. 8, No. 3, 2004, pp. 59–72.

Weyl, Hermann, *The Continuum*, trans. Pollard, Stephen and Bole, Thomas (New York: Dover, 1987).

Whalen, Philip, 'Gaston Roupnel (23 September 1871–14 May 1946)', in Daileader, Philip and Whalen, Philip (eds), *French Historians 1900–2000* (Oxford: Wiley-Blackwell, 2010), pp. 527–44.

Index

a priori, 36, 72, 84, 91, 104
  functional, 13
  historical, 2, 25, 32, 42, 63, 111–14, 117, 165
  mathematical, 2, 11, 13–14, 28, 31–4, 38, 117, 128, 167n
Althusser, Louis, 2, 145, 146
analysis of experience, 28, 31–4
analytic of finitude, 9, 34, 45, 102, 114, 137
anthropology, 34–8, 47, 56, 137, 162
archive, 103, 117–18, 139, 155
associated field, 95, 96, 116, 154, 171n
atom, 77, 83, 86, 101, 169n
  notional, 13, 54
  see also atomism
atomism, 15, 28–31, 42, 83–4, 87, 88, 90, 101, 172n
  temporal, 41, 139
authorities of delimitation, 64–5

Bachelard, Gaston, 1–2, 11–16, 38, 41, 48, 52–4, 64, 66–8, 80, 87, 145–6, 147, 166n, 167n, 172n
  The Formation of the Scientific Mind, 12
  La dialectique de la dureé, 14, 173
  La philosophie du non, 13–14
  L'intuition de l'instant, 14–15
  Les intuitions atomistiques, 87, 171
  The Dialectic of Duration see La dialectique de la dureé
Barsotti, Raymond, 167n
Baudelaire, Charles, 97
Bergson, Henri, 14, 173n
Blanchot, Maurice, 100–1, 107, 157
Bolzano, Bernard, 18, 81
Bourbaki, Nicolas, 22, 168n
Brouwer, Luitzen, 17, 80–1

Canguilhem, Georges, 2, 16, 41, 64
Cassou-Noguès, Pierre, 168n, 170n, 173n
Cavaillès, Jean, 16–22, 24, 31, 33–4, 45–6, 49, 50, 59, 60–1, 64, 67, 72, 80–1, 83–4, 95, 108, 109, 113, 132, 136, 140–1, 155, 156–7, 161, 166n, 168n, 169n, 170, 171n, 172n
  'On Logic and the Theory of Science', 17, 18, 150, 64, 168n, 170n
  'Transfini et continu', 33, 81, 171n
change, 20–1, 61, 75, 121, 136–41, 151, 153, 163–4
clinamen, 29, 169n
concepts, 21–2, 32, 59, 72–8, 82, 126, 156
construction, 13–14, 18–22, 32–5, 46, 99–100, 103–4, 107, 143, 171n
constructivism, 11–12, 146
continuity, 49–50, 108, 123, 127, 137–9, 142
contradiction, 128–31
correlate (of statement), 93

Dasein, 9–10, 35, 56, 76, 99, 102, 116, 139, 166
Deleuze, Gilles, 161
demonstration, 18, 21, 22, 46, 81, 94–5, 171n
Derrida, Jacques, 107, 157, 158
Descartes, René, 56, 94, 169n
Diderot, Denis, 145
discontinuity, 15, 41–4, 87, 104, 119, 123, 125, 138, 142, 146
  temporal, 11, 52
  see also time

discourse, 34, 42, 46, 52–7, 62, 66, 68–9, 71–9, 81–2, 85–6, 88, 99–105, 108–10, 115, 117, 135–42
  autonomy of, 108, 141
  ontology of, 92, 101
  time of, 108, 131
  unity of, 79, 81, 111
discursive formation, 60, 67–8, 74, 77, 82, 84, 101, 103–4, 106, 119, 125, 130–1, 135, 138, 141–2, 167n, 171n
dispersion, 12, 16, 45, 52, 59–61, 63, 78, 101, 123, 132
  temporal, 11, 34–8, 46, 100, 103, 128, 136–7, 139, 162
Dosse, François, 22, 168

empiricism, 12, 98, 110
enunciative field, 96, 102, 105, 118, 126, 171; *see also* associated field
enunciative function, 95, 98, 130, 154, 163
Epicurus, 29, 157
episteme, 149–50
epistemological break, 11–12, 145, 167n
epistemologisation, 147–8
epistemology, 23–5, 28, 42, 61, 132–3, 138, 147, 152, 155, 168n, 172n
eschatology, 8–11, 28, 34–6, 153
ethics, 164–5; *see also* morality
evolution, 51–2
experience, 2, 8–10, 12–16, 20–1, 28, 31–7, 41, 45, 54, 63, 112–14, 117, 143–4, 153, 166n, 171n
exteriority, 68, 106–7

finitude, 1, 7, 8–11, 19, 23, 33–4, 45, 50, 102, 114–16, 118, 137, 139, 152
formalism, 32–3, 38, 72, 168n, 169n
Foucault, Michel
  'Introduction' to *Kant's Anthropology*, 34, 137
  'On the Ways of Writing History', 172n–3n
  The Birth of Biopolitics, 14, 167n
  The Birth of the Clinic, 47, 78
  The History of Madness, 47, 78
  The Order of Things, 1, 7, 13, 16, 19, 23, 28, 31–5, 38, 44, 47, 53, 62, 69, 78, 102, 107, 111, 114, 127, 128, 133, 149, 152, 154, 162, 164, 166n
freedom, 36, 119, 122, 153, 156, 163

genealogy, 55, 128, 135–6
Gödel, Kurt, 18
grids of specification, 64–5, 74, 154
Guéroult, Martial, 41, 42

Hegel, Georg Wilhelm Friedrich, 10, 50–1, 118
Heidegger, Martin, 9–10, 34–7, 53, 56, 76, 99–100, 102, 114–16, 137
  Being and Time, 35, 56, 93, 99, 169
  Kant and the Problem of Metaphysics, 35
hermeneutics, 42, 99, 120–1, 134
Hilbert, David, 18, 80, 168n
history, 8–11, 15, 19, 22, 29–31, 33–4, 38, 41–7, 50–1, 58–61, 75, 83–4, 102–4, 112, 125, 128–9, 148–56, 161, 164–5, 167n, 169n, 170n
  archaeological history, 34, 54, 110, 147
  of ideas, 120–4, 129
  of mathematics, 20–2, 31, 83–4, 109–10, 140, 147–9, 171n, 172n
Husserl, Edmund, 10, 17–19, 50, 59, 64, 94, 127, 166n, 170n

incommensurability, 57, 125, 170n
instant, 15, 52–3
interpretation, 105–6, 134, 141
intuition, 12, 14–15, 18, 21, 26, 32, 35–6, 38, 42, 49, 52, 80–1, 83–4, 95, 113, 148, 166n
intuitionism, 17, 81, 168n

Kant, Immanuel, 1, 14, 19–20, 31–8, 45, 52–4, 68, 76, 118, 137, 139, 167n
  Anthropology from a Pragmatic Point of View, 35–8, 45, 131, 137
  The Critique of Pure Reason, 31–3, 35–7, 52
Kuhn, Thomas, 25, 123, 168n–9n, 170n

language, 7–9, 99–102, 108, 149
law, 13–14, 29–30, 44, 58–9, 71–3, 75, 77, 81, 101, 104, 112, 124, 140, 153, 164, 167n, 169n, 172n; *see also* regularity

Leibniz, Gottfried Wilhelm, 25–8, 31, 81, 105, 169n
literature, 32, 94, 101, 157
Lucretius, 26, 28–30, 77, 87, 157, 169n, 173n

madness, 57, 78, 161
man
  as transcendental-empirical double, 8–9, 31, 34, 44, 111–12, 114, 162
  disappearance of, 7, 11, 35, 37, 47, 152, 158, 165
  finitude of, 7–9, 11, 19, 33–4, 102, 115, 147, 152–3, 164
  see also anthropology
Marxism, 129, 132
mathematics, 1, 12, 17–28, 31–4, 38, 42, 45, 49–50, 61, 67, 72, 81, 83–4, 94, 103, 109–10, 113, 115, 136, 147–9, 151, 155, 168n, 171n, 172n; *see also* history
Mayr, Ernst, 51, 170
microphysics, 68
modernity, 7–10, 33–4, 38, 44, 47, 62, 103, 111, 117, 134, 158, 161, 164–5
morality, 28, 30, 164; *see* also ethics
multiplicity, 11, 15–16, 30, 36, 45, 52, 60, 78, 80, 87, 142, 148, 151, 157

neuroscience, 25, 32, 133
Nietzsche, Friedrich, 47, 80, 121, 128, 157, 161

ontological difference, 53, 99–100, 115–16
ontology, 9–10, 25, 56, 59, 89, 91, 99–103, 137–8
Other, 10, 46, 108, 157

phenomenology, 9–10, 16, 19, 27, 45, 50, 59, 64, 69, 71, 100–1, 103–4, 126, 133–4, 137, 149, 166n
philosophy, 17, 22–3, 28, 31, 41–3, 45, 104, 107, 125, 129, 154, 156
pluralism, 14, 16, 26; *see also* temporal pluralism
population thinking, 51–2
positivism, 8–11, 23, 28, 34–5, 37, 73, 153–4
positivity, 9, 111, 118, 146
power, 12, 105–6, 156
pragmatism, 93, 132
prediscursive, 84, 88, 171n

recurrence, 109–10, 172n
regularity, 29, 55, 58, 60, 62, 72, 75, 77, 82–4, 96, 102–4, 106, 110, 122, 124–30, 141–3, 155, 165, 171n
Roupnel, Gaston, 15, 167–8n

science, 8, 12–13, 16–20, 24–6, 28, 41, 46, 48–50, 54, 61, 66, 71, 73, 107, 112, 120, 123–4, 144–51, 161, 165, 169n, 172n
series, 44, 58, 73–4, 78, 83–4, 88, 94, 96, 112, 121, 155
Serres, Michel, 22–31, 34, 42–3, 45, 61, 67, 77, 80–1, 83, 87, 99, 109, 120, 132, 142, 145, 147–9, 155, 168n–9n, 171n, 172n
  Conversations on Science, Culture and Time, 168n, 172n
  Genesis, 171n, 172n, 173n
  Hermes I: la communication, 23, 43, 84, 148, 172n
  Hermes II: L'interférence, 27, 169n
  La naissance de la physique dans le texte de Lucrece, 28
  Le Système de Leibniz et ses modèles mathématiques, 169n
  The Birth of Physics, 34, 77, 169n, 172n
  The Troubadour of Knowledge, 170n, 171n
set theory, 49
Sinaceur, Hourya, 168n, 171n
statement, 48, 55–60, 70–80, 82, 85–113, 115–17, 122, 124, 126–7, 130, 139–40, 142, 144, 146, 149, 170n, 171n, 172n
  analysis of, 108
  as atom of discourse, 86–8, 98, 101
  existence of, 112–13, 115–17
  as function, 86, 90, 98
  invisibility of, 101
  materiality of, 89, 96–8
structuralism, 22–3, 45, 120, 132, 145, 148
subject, 8, 15–20, 26, 32, 35–6, 38, 46–7, 50–1, 56, 69–71, 85, 93–5, 100–1, 107–9, 113–14, 122, 124, 140, 144–5, 148–9, 152–3, 156–7, 161, 163–5, 170n
  transcendental, 18–19, 32, 35, 62, 69
surfaces of emergence, 64–6, 74, 154

sur-rationalism, 13
synthesis, 18–19, 32, 34–8, 51–2, 54, 76, 78, 91, 171n
system of formation, 78–9, 82–3, 170n

temporal dispersion *see* dispersion
temporal pluralism, 17, 22, 42, 81, 109, 123, 131, 142, 146, 171n
thinking (to think), 7, 10, 12, 18–19, 21, 31, 35–6, 38, 42, 46, 48, 53, 62, 77, 80, 107–8, 116–17, 157, 161–2, 165, 167n, 171n, 172n
threshold, 64, 118, 142, 150, 162
  of epistemologisation, 146–8
  of formalisation, 146–8
  of positivity, 146–7
  of scientificity, 71, 146–7
time, 2, 14–15, 29, 33–7, 45–6, 51, 84, 94–5, 105, 108, 109, 114, 116, 118, 123, 131, 137–9, 141–3, 148, 152–3, 157, 162, 172n
  arithmetisation of, 15, 41
  continuous, 14
  unity of, 137, 153
  see also discontinuity: temporal; discourse; dispersion
transcendental-empirical double, 8–10, 34–5, 44
transformation, 20, 37, 58–61, 63, 75–7, 84, 96, 103, 105, 108–9, 117–19, 121–2, 127, 136–43, 147, 151, 153, 155, 173n

Vattimo, Gianni, 134
void, 15, 29, 30, 101, 105–6, 125, 173n